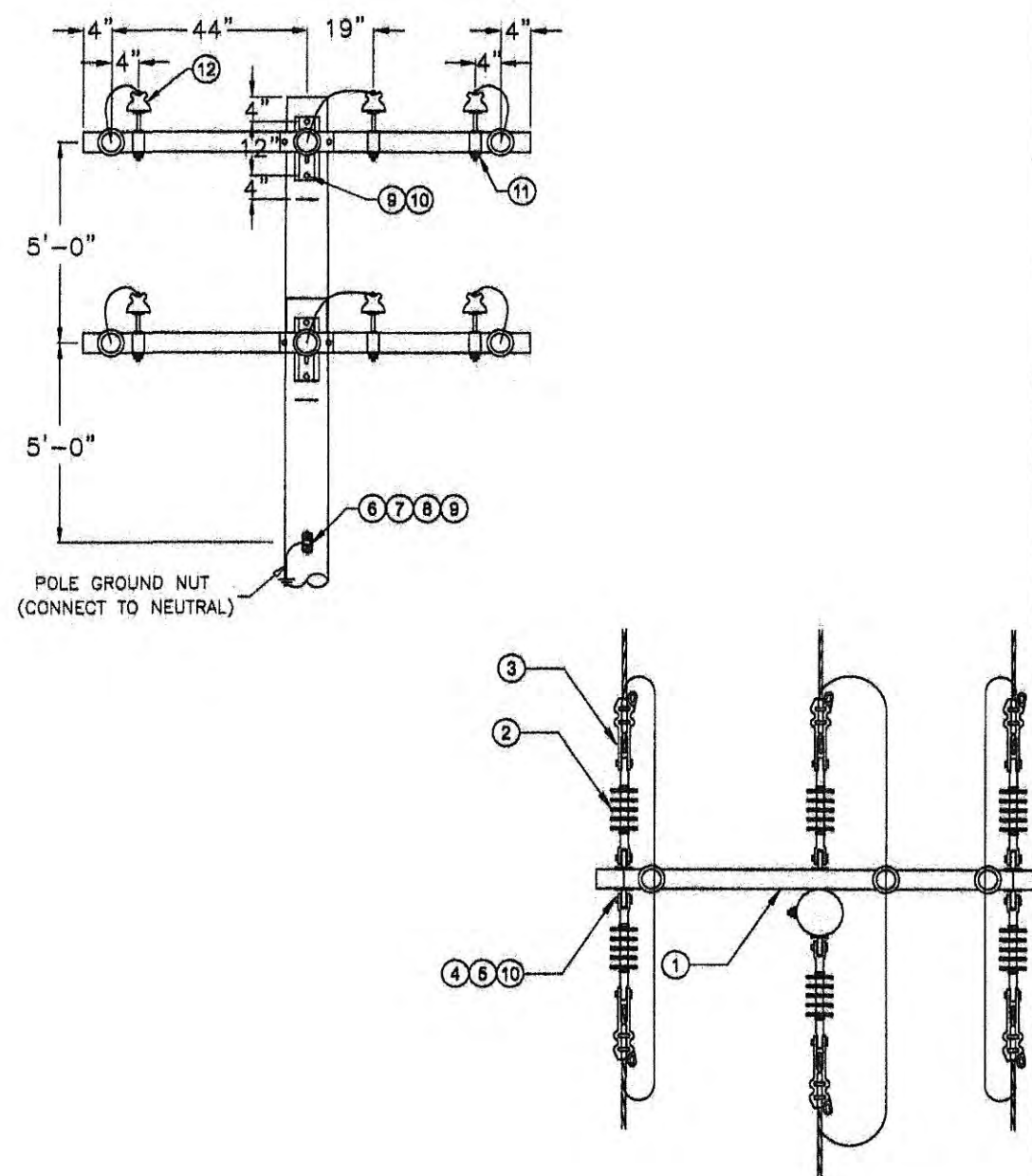


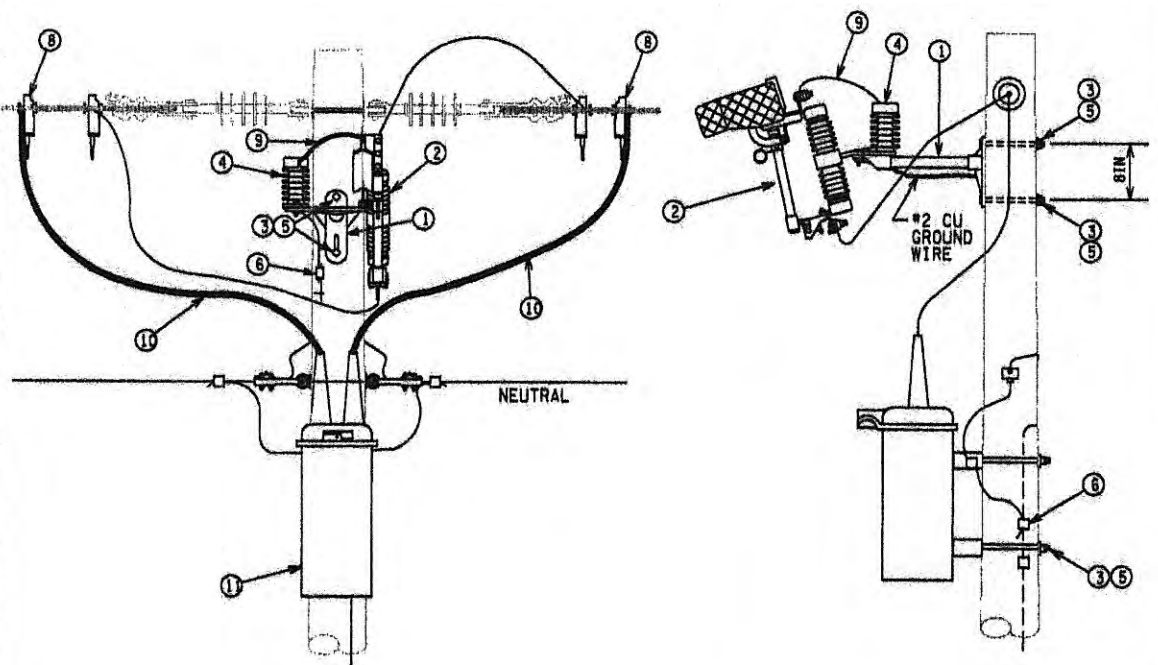
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(68)	U5-11
		73035-3209-14	

ROANE CO.
REV. 3-18-2013: UPDATED CONSTRUCTION YEAR AND BOLLARD
DETAIL. ADDED DC-C8.
REV. 4-22-13: REMOVED 04 FROM SHEET NUMBERING.

- NOTES:
1. ALL INSULATORS TO BE 15KV POLYMER
UNLESS SPECIFIED OTHERWISE.
 2. ALL CROSSARMS TO BE BRACELESS FIBERGLASS
CONSTRUCTION UNLESS SPECIFIED OTHERWISE.



ID	QTY.	DESCRIPTION
1	2	CROSSARM, FIBERGLASS HEAVY DUTY DEADEND 8'-0"
2	12	INSULATOR, SUSPENSION 15KV
3	12	CLAMP, DE. SIZE AS REQ'D
4	8	EYEBOLT, 5/8" X REQ'D
5	6	EYENUT, 5/8"
6	2	CLEVIS, SECONDARY
7	2	INSULATOR, SECONDARY
8	2	CLAMP, NEUTRAL DE
9	6	BOLT W/NUT, 5/8" X REQ'D
10	8	WASHER, 3", SQUARE CURVED
11	6	PIN, SADDLE TYPE FOR FIBERGLASS ARMS
12	6	INSULATOR, PIN TYPE, 15KV
13	-	CONNECTORS, AS REQ'D
14	-	JUMPERS, AS REQ'D

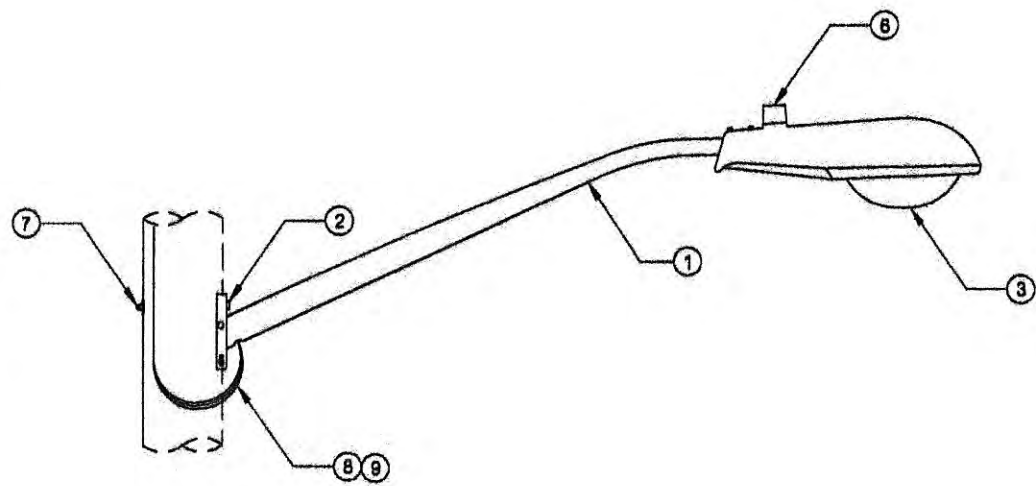


NOTE: ALL GROUNDS TO BE ELECTRICALLY
BONDED TO SYSTEM NEUTRAL.

ID	ITEM #	INDEX DESCRIPTION	QTY
1	179838	BRACKET FG CO-ARR 2-HOLE	1
2	170605	CUTOUT 15KV LOADBREAK	1
3	151548	BOLT MACHINE 5/8X12IN	4
4	140517	ARRESTER 10KV MO GAPLESS	1
5	151456	WASHER SQUARE 2-1/4IN	8
6	144667	CONNECTOR 1-BOLT PG 1/0	6
7	168575	RODS TAP PROTECTION 1/0	2
8	151696	CLAMP HOTLINE 1/OAR-CU	4
9	174508	WIRE CU WF 2AWG AS REQ'D	4
10		JUMPERS, STRANDED AS REQ'D	1
11		RECLOSER, OIL CIRCUIT	1

DC-C8 DOUBLE SUPPORT DOUBLE DEADEND
ON CROSSARM
N.T.S.

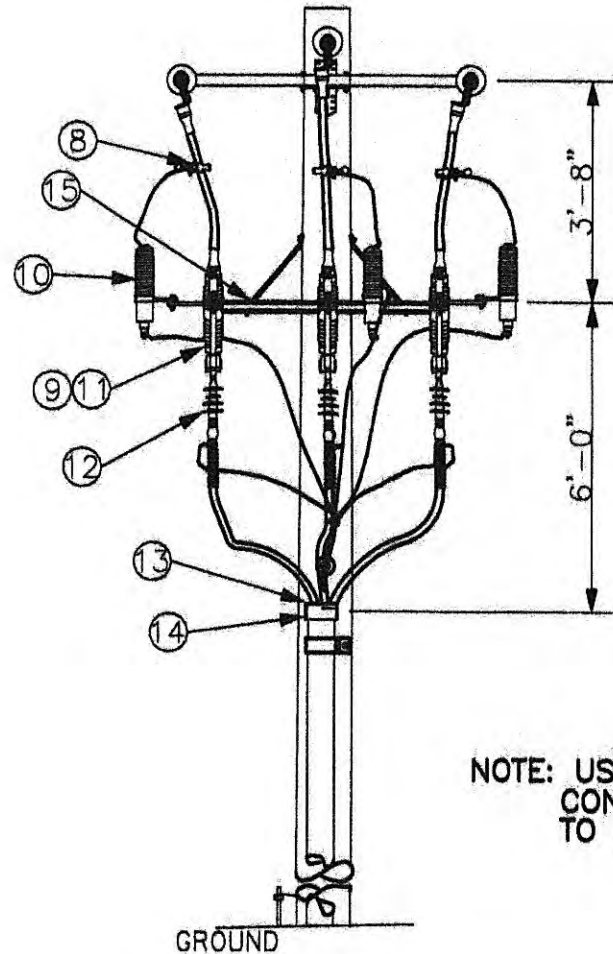
RECL RECLOSER
N.T.S.



- NOTES:
1. GROUND TO POLE NEUTRAL.
 2. ACTUAL LIGHT FIXTURE MAY DIFFER FROM ONE SHOWN.
COORDINATE LIGHT TYPE AND STYLE WITH UTILITY.

ID	QTY.	DESCRIPTION
1	1	ARM, STREET LIGHT, GALV. 6" X 1.25"
2	1	BOLT, MACHINE, 5/8" X 12"
3	1	FIXTURE, STREET LIGHT HEAD, HPS
4	1	GROUNDING LUG, FOR STREET LIGHT ARM
5	1	LAMP, HPS
6	1	PE CELL, SOCKET TYPE
7	1	WASHER, 2-1/4" SQUARE, 11/16"
8	12	WIRE, #12 COPPER SOLID, WHITE
9	12	WIRE, #12 COPPER SOLID, BLACK

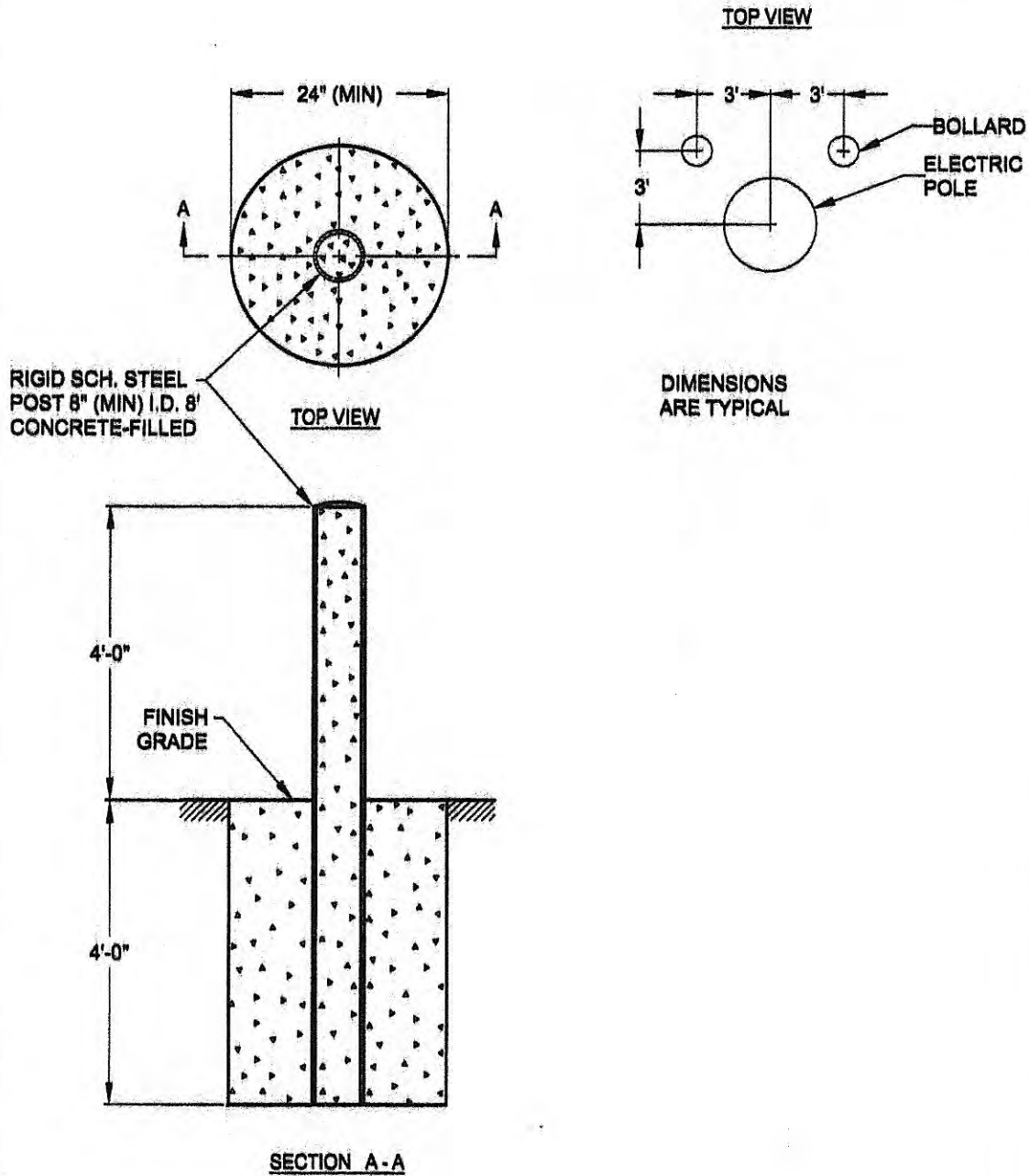
LT STREET LIGHT / PRIVATE LIGHT
N.T.S.



NOTE: USE SCHED 80
CONDUIT FROM GROUND
TO MIN. OF 8'

ID	QTY.	DESCRIPTION
1	1	WIRE CU BARE SD 6AWG SOL
2	4	WIRE CU WP SD 2AWG 7 STR XLP
3	2	BOLT MACH 5/8"
4	2	WASHER SQUARE 2 1/4", 11/16" HOLE
5	1	CONN 2 BOLT
6	3	CONN SPLIT BOLT BRNZ 6AWG CU-CU
7	3	CONN SPLIT BOLT TIMMED
8	3	CLAMP HOTLINE SIZE AS REQUIRED
9	3	CUTOUT 15KV
10	3	ARRESTER 10KV M/O GAPLESS RISER POLE
11	3	FUSE 15KV 200A
12	3	TERMINATOR CABLE RUB 1 PIECE 15KV SIZE AS REQUIRED
13	1	COMPOUND SEALING DUCT NON-TOXIC
14	1	GRIP CABLE 4" COND
15	1	BRACKET FGLS CO-ARR 3 PHASE

TP3S THREE PHASE PRIMARY RISER
N.T.S.



- TYPICAL GUARD POST ARRANGEMENTS
FOR ELECTRIC UTILITY POLES:
1. QUANTITY AND ARRANGEMENT OF GUARD POSTS ARE TO BE DETERMINED BY
ENGINEER / INSPECTOR IN RELATION TO POLE'S LOCATION TO VEHICULAR TRAFFIC.
 2. GUARD POSTS ARE TO BE RIGID SCH. STEEL, 12" (MIN) I.D. X 8' LONG,
CONCRETE-FILLED AND SET IN A 24" (MIN) DIA. CONCRETE-FILLED HOLE.
 3. GUARD POST TO BE PAINTED HIGH-VISIBILITY YELLOW FROM GROUND LINE TO TOP
OF POST.
 4. SHIFT BOLLARDS AS REQUIRED TO AVOID U/G CONFLICTS.

BLDS BOLLARD
N.T.S.



HUB

Harriman Utility Board

JOB NUMBER: 81128
DESIGNED: CED
DRAWN: RKW
CHECKED: JNC

Allen&Hoshall
engineering since 1915
8331 E. WALKER SPRINGS LANE, SUITE 102
KNOXVILLE, TENNESSEE 37923
(865) 693-7881 (865) 693-7824

SCALE
N.T.S.

DATE
03.18.2013

ASSEMBLY DETAILS

UTILITIES INDEX

SHEET NAME

UTILITIES INDEX, AND UTILITY OWNERS
UTILITY LAYOUTS
UTILITY LAYOUT - HARRIMAN UTILITY BOARD (WATER)
UTILITY LAYOUT - HARRIMAN UTILITY BOARD (SEWER)
UTILITY LAYOUT - HARRIMAN UTILITY BOARD (GAS)
UTILITY LAYOUT - HARRIMAN UTILITY BOARD (POWER)
UTILITY LAYOUT - AT&T TENNESSEE (TELEPHONE)
UTILITY LAYOUT - ROCKWOOD WATER, SEWER & GAS (GAS)

SHEET NUMBER

U1-1
U1-2 THRU U1-6
U2-1 THRU U2-7
U3-1 THRU U3-9
U4-1 THRU U4-7
U5-1 THRU U5-11
U6-1 THRU U6-5
U7-1 THRU U7-3

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U1 -1

S.R. 29 ROANE COUNTY
73035-2206-14 (R.O.W.)
73035-3209-14 (CONST.)

UTILITIES NOT IN ROADWAY CONTRACT

FIBER OPTIC - SPRINT COMMUNICATIONS CO. (NO CONFLICT)
411 HUGER STREET
COLUMBIA, SC 29201
STEVE THOMPSON 678-852-2726

WATER - ROCKWOOD WATER, SEWER & GAS (NO CONFLICT)
110 NORTH CHAMBERLAIN AVENUE
ROCKWOOD , TN. 37854
KIM RAMSEY (865) 354-0163

SEWER - ROCKWOOD WATER, SEWER & GAS (NO CONFLICT)
110 NORTH CHAMBERLAIN AVENUE
ROCKWOOD , TN. 37854
KIM RAMSEY (865) 354-0163

CABLE - XFINITY/COMCAST (NO CONFLICT)
5720 ASHEVILLE HIGHWAY
KNOXVILLE, TN 37924
CONTACT PERSON: JT POPE (865) 862-5060

UTILITIES IN ROADWAY CONTRACT

POWER - HARRIMAN UTILITY BOARD
P.O. BOX 434
HARRIMAN, TN. 37748
JAMES BURNHAM (865) 285-1022

WATER - HARRIMAN UTILITY BOARD
P.O. BOX 434
HARRIMAN, TN. 37748
JAMES BURNHAM (865) 285-1022

SEWER - HARRIMAN UTILITY BOARD
P.O. BOX 434
HARRIMAN, TN. 37748
JAMES BURNHAM (865) 285-1022

GAS - HARRIMAN UTILITY BOARD
P.O. BOX 434
HARRIMAN, TN. 37748
JAMES BURNHAM (865) 285-1022

GAS - ROCKWOOD WATER, SEWER & GAS
110 NORTH CHAMBERLAIN AVENUE
ROCKWOOD , TN. 37854
KIM RAMSEY (865) 354-0163

PHONE - AT&T TENNESSEE
9733 PARKSIDE DRIVE
KNOXVILLE, TN. 37922
DAVID OVERMAN 865-539-8579
EMAIL: DAVID.OVERMAN@ATT.COM

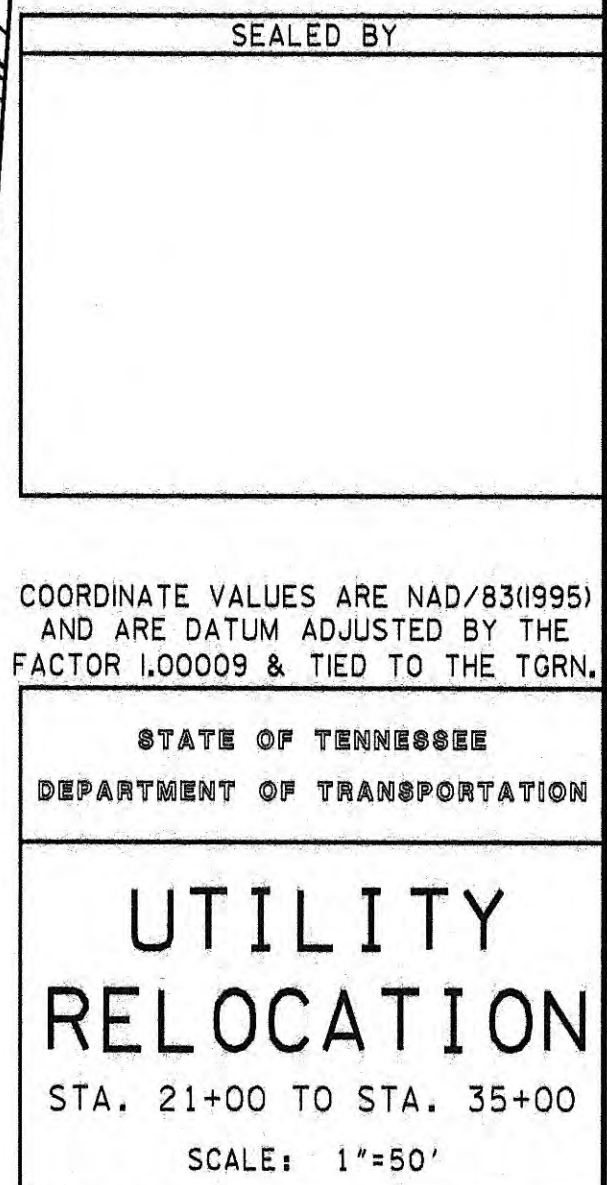
SEALED BY

Ruritan
Road
Utility
Relocations

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

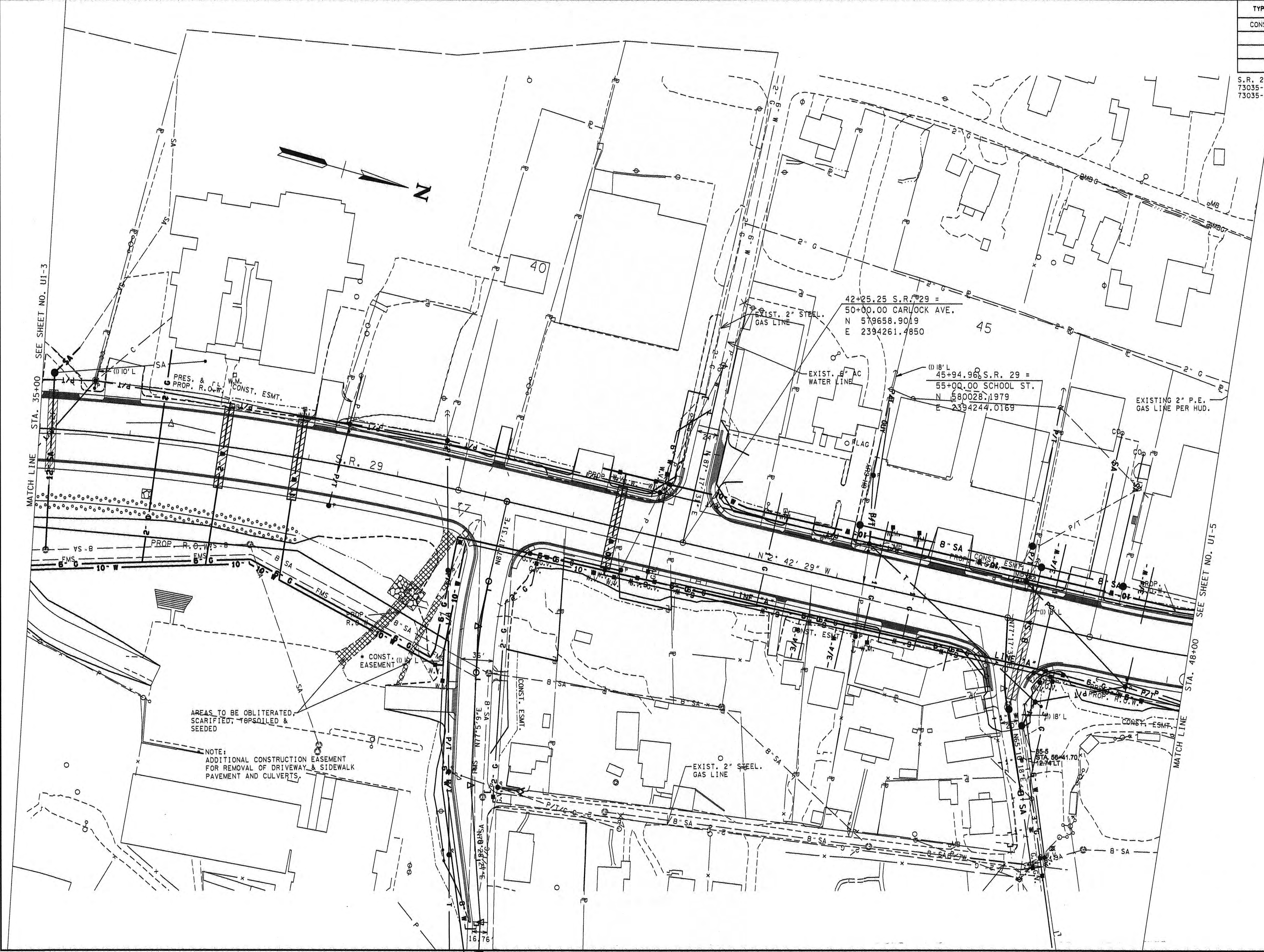
UTILITIES INDEX UTILITY OWNERS

7/17/2013
K:\Environmental\50950-46\50954-46\Admin\UI-SHEETS\RoSR29 UI-3.sht



TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U1-4

S.R. 29
73035-2206-14 (R.O.W.)
73035-3209-14 (CONST.)
ROANE COUNTY



SEALED BY

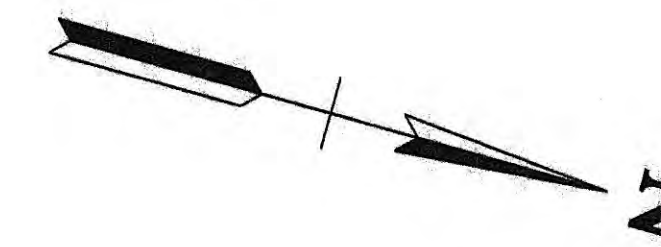
COORDINATE VALUES ARE NAD/83(1995)
AND ARE DATUM ADJUSTED BY THE
FACTOR 1.00009 & TIED TO THE TGRN.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

UTILITY
RELOCATION
STA. 35+00 TO STA. 48+00
SCALE: 1"=50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U1-5

S.R. 29 ROANE COUNTY
73035-2206-14 (R.O.W.)
73035-3209-14 (CONST.)



END R.O.W. PROJECT NO. STP-29(58)
73035-3209-14
STA. 56+17.62
N 580981.2381
E 2393924.0221

56+66.40 S.R. 29 =
92+50.00 S.R. 61
(SOUTH ROANE STREET)
N 581021.50
E 2393896.48

SEALED BY

COORDINATE VALUES ARE NAD/83(1995)
AND ARE DATUM ADJUSTED BY THE
FACTOR 1.00009 & TIED TO THE TGRN.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

UTILITY RELOCATION

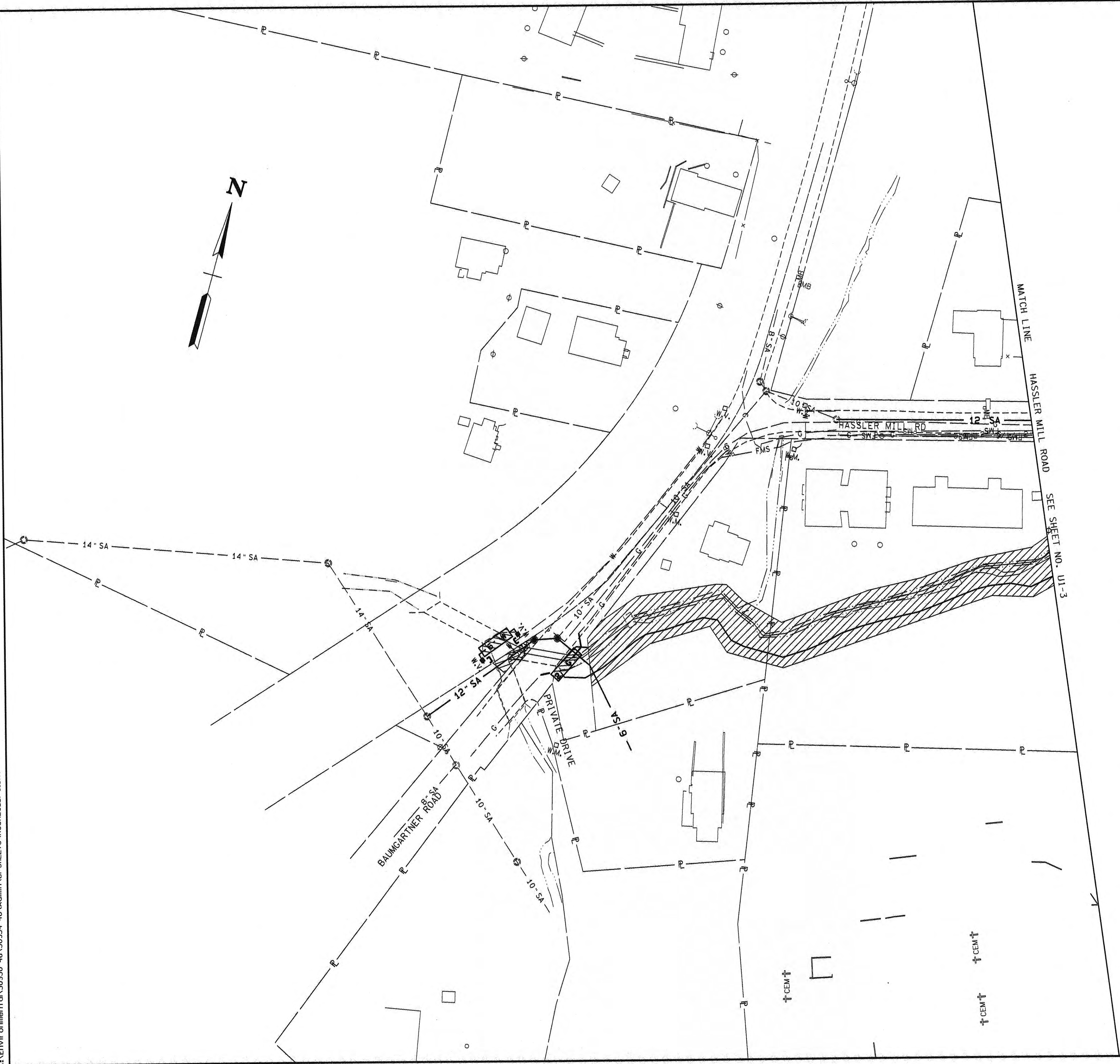
STA. 48+00 TO END OF PROJ.
SCALE: 1"=50'

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U1-6

S.R. 29
73035-2206-14 (R.O.W.)
73035-3209-14 (CONST.)

ROANE COUNTY



SEALED BY

COORDINATE VALUES ARE NAD/83(1995)
AND ARE DATUM ADJUSTED BY THE
FACTOR 1.00009 & TIED TO THE TGRN.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

**UTILITY
RELOCATION**
HASSLER MILL ROAD AND
BAUMGARTNER ROAD
SCALE: 1"=50'

INDEX OF DRAWINGS

SHT. NUMBER	SHT. NAME
U2-1	ESTIMATED QUANTITIES (WATER)
U2-2	UTILITY RELOCATION PLAN (WATER)
U2-3	UTILITY RELOCATION PLAN (WATER)
U2-4	UTILITY RELOCATION PLAN (WATER)
U2-5	UTILITY RELOCATION PLAN (WATER)
U2-6	UTILITY RELOCATION PLAN (WATER)
U2-7	TYPICAL WATER DETAILS

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	PERCENT UTILITY	PERCENT PROJECT
795-01.03	6IN DIP RESTRAINED JOINT WATER LINE	L.F.	295	19%	81%
795-01.04	6IN DIP SLIP JOINT WATER LINE	L.F.	2,460	19%	81%
795-01.06	8IN DIP SLIP JOINT WATER LINE	L.F.	55	0%	100%
795-01.07	10IN DIP RESTRAINED JOINT WATER LINE	L.F.	370	21%	79%
795-01.08	10IN DIP SLIP JOINT WATER LINE	L.F.	4,490	21%	79%
795-03.02	2IN PVC WATER LINE	L.F.	833	0%	100%
795-05.63	BORE/JACK 12IN STEEL CASING PIPE-UNCON.	L.F.	230	19%	81%
795-05.67	BORE/JACK 20IN STEEL CASING PIPE-UNCON.	L.F.	340	21%	79%
795-05.91	2IN PVC CASING PIPE OPEN CUT	L.F.	355	0%	100%
795-05.92	4IN PVC CASING PIPE OPEN CUT	L.F.	90	20%	80%
795-06.01	CONNECT TO 2IN WATER LINE	EACH	5	0%	100%
795-06.04	CONNECT TO 6IN WATER LINE	EACH	8	0%	100%
795-06.05	CONNECT TO 8IN WATER LINE	EACH	1	0%	100%
795-07.03	6IN X 6IN TAPPING SLEEVE AND VALVE	EACH	4	0%	100%
795-07.10	10IN X 10IN TAPPING SLEEVE AND VALVE	EACH	1	100%	0%
795-08.01	2IN GATE VALVE ASSEMBLY	EACH	5	0%	100%
795-08.04	6IN GATE VALVE ASSEMBLY	EACH	9	19%	81%
795-08.05	8IN GATE VALVE ASSEMBLY	EACH	1	0%	100%
795-08.06	10IN GATE VALVE ASSEMBLY	EACH	20	21%	79%
795-09.01	3/4IN WATER SERVICE METER ASSEMBLY	EACH	29	0%	100%
795-09.02	1IN WATER SERVICE METER ASSEMBLY	EACH	9	0%	100%
795-09.28	3/4IN COPPER SERVICE PIPE	L.F.	615	0%	100%
795-09.29	1IN COPPER SERVICE PIPE	L.F.	875	0%	100%
795-10.03	1IN AUTO AIR RELEASE VALVE ASSEMBLY	EACH	4	0%	100%
795-11.01	BLOW-OFF ASSEMBLY	EACH	1	0%	100%
795-11.02	FIRE HYDRANT ASSEMBLY	EACH	6	0%	100%
795-13.01	DI FITTINGS	LBS	11,500	0%	100%
795-13.03	PVC FITTINGS	LBS	150	0%	100%
795-15.02	12IN STEEL CASING PIPE OPEN CUT METHOD	L.F.	65	19%	81%
795-15.05	20IN STEEL CASING PIPE OPEN CUT METHOD	L.F.	30	21%	79%

FOOTNOTES:

- 1 INCLUDES ALL MATERIALS, LABOR, EQUIPMENT FOR COMPLETE INSTALLATION OF PIPE INCLUDING BUT NOT LIMITED TO TRAFFIC CONTROL, MATERIALS, EQUIPMENT, EXCAVATION IN BOTH UNCONSOLIDATED AND ROCK, REMOVAL AND REPLACEMENT OF UNSUITABLE SOIL, ENVELOPE/BEDDING MATERIAL, BACKFILLING, FLOWABLE FILL, THRUST BLOCKING CONCRETE DEADMAN, PIPE FUSION, TRACER WIRE, WARNING TAPE, APPURTENANCES, TEMPORARY/PERMANENT SHORING, MAINTAINING THE TRENCH, TESTING, FLUSHING, DISINFECTION, BACTERIOLOGICAL SAMPLING, TEMPORARY/PERMANENT SURFACE RESTORATION, AND ANY OTHER LABOR OR MATERIAL REQUIRED TO COMPLETE THE WORK AS SPECIFIED ON THE PLANS.
- 2 INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT INCLUDING BUT NOT LIMITED TO CASING PIPE, PIPE SPACERS, CASING END SEALS, FITTINGS, TRACER WIRE, WARNING TAPE, UTILITY LINE MARKERS AND TRAFFIC CONTROL. IF CASING PIPE HAS CARRIER PIPE, THE CARRIER PIPE SHALL BE PAID AT THE OPEN CUT ITEM.
- 3 INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY FOR CONNECTING TO AN EXISTING WATER LINE INCLUDING TRAFFIC CONTROL.
- 4 INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT INCLUDING BUT NOT LIMITED TO TAPPING SLEEVE, VALVE, VALVE BOX, BOX ADJUSTMENT, VALVE BOX COLLAR, VALVE MARKER, EXCAVATION, BEDDING, BACKFILL, BLOCKING AND RESTRAINT, TAP OF EXISTING LINE, AND TRAFFIC CONTROL.
- 5 INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT INCLUDING BUT NOT LIMITED TO FITTINGS, VALVE, VALVE STEM EXTENSIONS, VALVE BOX AND COVER, BOX ADJUSTMENT, VALVE BOX COLLAR, VALVE MARKER, EXCAVATION, BEDDING, BACKFILL, BLOCKING, AND TRAFFIC CONTROL.
- 6 INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT INCLUDING BUT NOT LIMITED TO MACHINERY, TOOLS OR APPARATUS NECESSARY FOR INSTALLATION OF ASSEMBLIES AS DESCRIBED IN THE PLANS AND SPECS EXCEPT FOR SERVICE LINE WHICH IS PAID SEPERATELY FOR EACH FOOT INSTALLED.
- 7 INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT FOR COMPLETE INSTALLATION OF SERVICE LINE OR CASING FOR SERVICE LINE ON LONG SIDE AND SHORT SIDE OF MAIN.
- 8 INCLUDES FITTINGS, GLANDS AND RESTRAINT DEVICES DESCRIBED IN POUNDS.
- 9 RESTRAINED JOINT WATER LINE ITEMS SHALL BE PAID FOR CARRIER PIPE INSIDE STEEL CASING ONLY.
- 10 RESTRAINING GASKETS REQUIRED ON SLIP JOINT PIPE AS A RESULT OF VALVES OR FITTINGS SHALL BE INCLUDED IN THE UNIT ITEM FOR SLIP JOINT WATER LINE. MECHANICAL RESTRAINED JOINT FITTINGS SHALL BE PAID BY POUND ACCORDING TO THE UNIT PRICE FOR DI OR PVC FITTINGS.

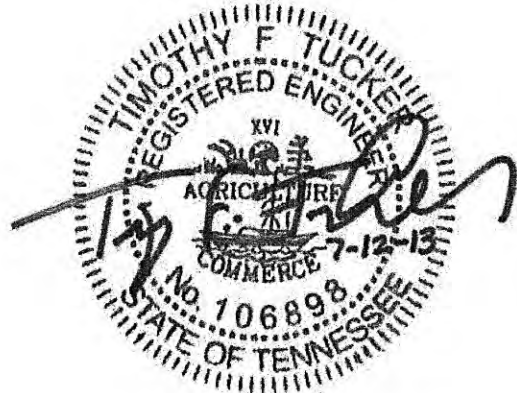
UTILITY INFORMATION

UTILITY TITLE	HARRIMAN UTILITY BOARD
ADDRESS	P.O. BOX 434 HARRIMAN, TN. 37748
CONTACT PERSON	FRANKIE DAVIS
PHONE	(865) 882-3242

GENERAL NOTES:

1. THE LOCATIONS OF THE EXISTING UTILITIES SHOWN ON THESE DRAWINGS ARE APPROXIMATE. THE EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CONTACTING THE UTILITY COMPANIES INVOLVED.
2. PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD THE EXISTING UTILITIES FROM DAMAGE DURING THE CONSTRUCTION OF THIS PROJECT. FURNISH ANY SPECIAL EQUIPMENT REQUIRED TO WORK OVER AND AROUND THE UTILITIES.
3. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT THE UTILITY OWNERS TO NOTIFY THEM OF WORK IN THE AREA AND REQUEST THEM TO PROPERLY LOCATE THEIR RESPECTIVE UTILITY. NOTIFICATION SHALL BE GIVEN AT LEAST THREE BUSINESS DAYS PRIOR TO COMMENCEMENT OF OPERATIONS AROUND THE UTILITY.
4. UTILITIES CAN BE LOCATED BY CALLING THE TENNESSEE ONE CALL SYSTEM, AT 811.
5. TRENCH DESIGN AND SAFETY FOR PIPELINE CONSTRUCTION IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM WITH ALL APPLICABLE LOCAL, STATE, AND OSHA REGULATIONS.
6. THE STONE BEDDING AND BACKFILL SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE UTILITIES SPECIFICATIONS.
7. ALL WATER LINES AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE UTILITIES SPECIFICATIONS.
8. WATER MAIN PIPE SHALL BE PRESSURE CLASS 350 D.I.P. OR SDR 17 PVC PER UTILITIES SPECIFICATIONS.
9. CONTRACTOR TO INSTALL WATER LINES AT A POSITIVE GRADE BETWEEN DESIGNATED HIGH AND LOW POINTS TO PREVENT TRAPPING OF AIR.
10. PROPOSED 1" AIR RELEASE VALVES SHALL BE INSTALLED AT HIGH POINTS IN THE PROPOSED WATER LINE, AND SHALL BE FIELD LOCATED BY THE RESIDENT PROJECT REPRESENTATIVE.
11. CONTRACTOR TO COORDINATE FIELD LOCATIONS OF PROPOSED FIRE HYDRANTS, WATER SERVICES AND METERS WITH RESIDENT PROJECT REPRESENTATIVE.
12. NO VALVES SHALL BE INSTALLED UNDER AREAS TO RECEIVE ASPHALT PAVEMENT UNLESS APPROVED BY RESIDENT PROJECT REPRESENTATIVE.
13. VALVES, HYDRANTS AND METER ASSEMBLIES SHALL BE ORIENTED SO AS TO ASSURE WATER LINE APPURTENANCES ARE NOT LOCATED WITHIN SIDEWALK AND/OR CURB/CURB & GUTTER AREAS.
14. CONTRACTOR SHALL USE RESTRAINED JOINT FITTINGS FOR ALL WATER PIPE FITTINGS, EXCEPT FOR FITTINGS AT TIE-IN CONNECTIONS WHICH SHALL BE RESTRAINED WITH CONCRETE THRUST BLOCKS.
15. CONTRACTOR SHALL INSTALL DETECTION WIRE AND WARNING TAPE PER UTILITY SPECIFICATIONS.
16. WATER LINE CROSSINGS UNDER S.R. 29 SHALL BE ENCASED WITH STEEL CASING AND BE INSTALLED BY OPEN CUT OR BORE AND JACK METHOD PER STATE RESIDENT PROJECT REPRESENTATIVE'S DISCRETION.
17. WATER MAIN MIN. COVER SHALL BE 30", MAX. COVER SHALL BE 54" UNLESS OTHERWISE APPROVED BY UTILITY OWNER.
18. ALL INCIDENTAL WORK, INCLUDING LABOR AND MATERIALS, NECESSARY TO COMPLETE THE PROJECT AS SHOWN IN THE CONTRACT DOCUMENTS, FOR WHICH A SEPERATE PAY ITEM IS NOT SHOWN SHALL BE PERFORMED BY THE CONTRACTOR AND NO ADDITIONAL PAYMENT SHALL BE MADE. THE COST OF THIS WORK SHALL BE MERGED INTO THE UNIT PRICES BID FOR THE BID ITEMS SHOWN.

LEGEND	
	PROPOSED CENTERLINE
	PROP/EXIST. R.O.W.
	PROPOSED WATER LINE
	PROPOSED STORM SEWER
	EXIST. PROPERTY LINE
	EXIST. SANITARY SEWER
	EXIST. WATER LINE
	EXIST. POWER LINE
	EXIST. NATURAL GAS
	EXIST. STORM SEWER
	EXIST. STREAM
	EXIST. WATER METER
	EXIST. GAS METER
	EXIST. MAILBOX



HARRIMAN
UTILITY
BOARD

WATER LINE
RELOCATION

ESTIMATED QUANTITIES

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-291581	U2-1
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.



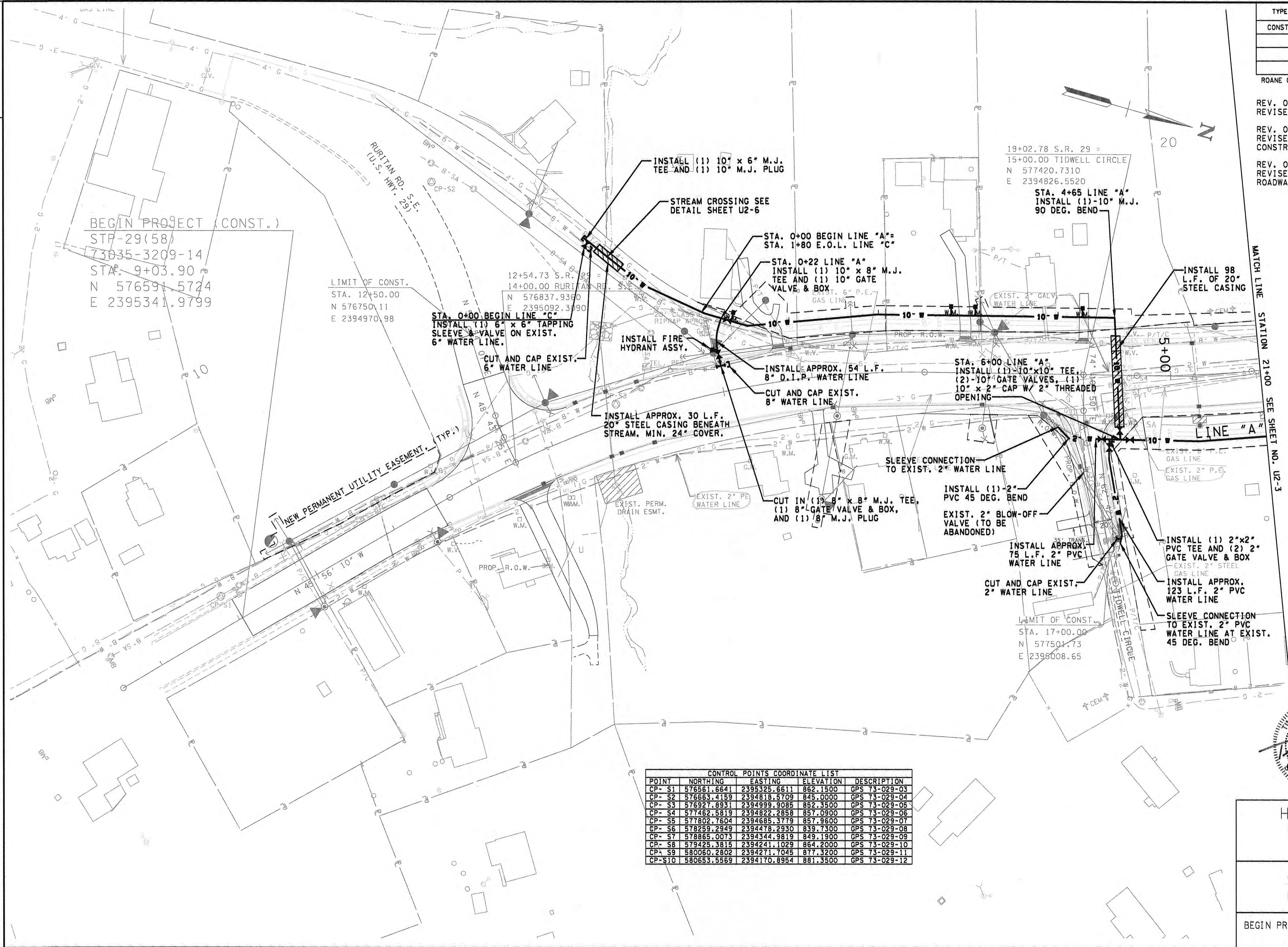
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U2-2
		73035-3209-14	

ROANE CO.

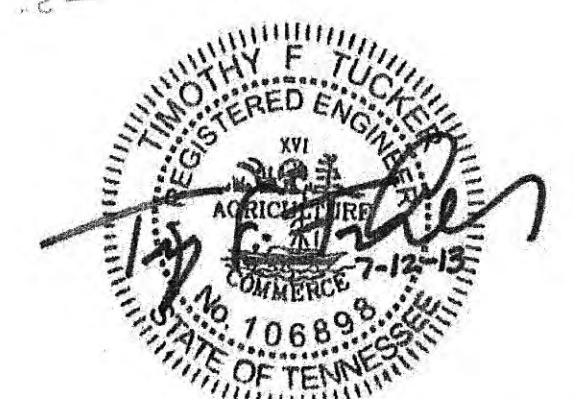
REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.



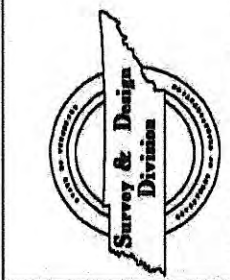
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CP- S2	576663.4159	2394818.5709	845.0000	GPS 73-029-04
CP- S3	576921.8931	2394999.9085	852.3500	GPS 73-029-05
CP- S4	577462.5819	2394822.2958	857.0900	GPS 73-029-06
CP- S5	577802.7604	2394685.1179	857.9600	GPS 73-029-07
CP- S6	578259.2949	2394478.2930	839.7300	GPS 73-029-08
CP- S7	578865.0073	2394344.9819	849.1900	GPS 73-029-09
CP- S8	579425.3815	2394241.1029	864.2000	GPS 73-029-10
CP- S9	580060.2802	2394271.7045	877.3200	GPS 73-029-11
CP- S10	580653.5569	2394170.8954	881.3500	GPS 73-029-12



HARRIMAN
UTILITY
BOARD

WATER LINE
RELOCATION

BEGIN PROJ. TO STA. 21+00.00
SCALE: 1"=50'

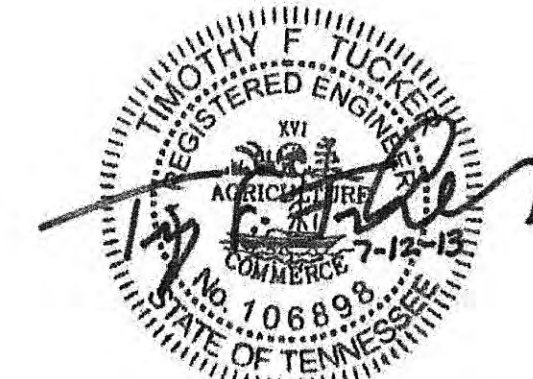
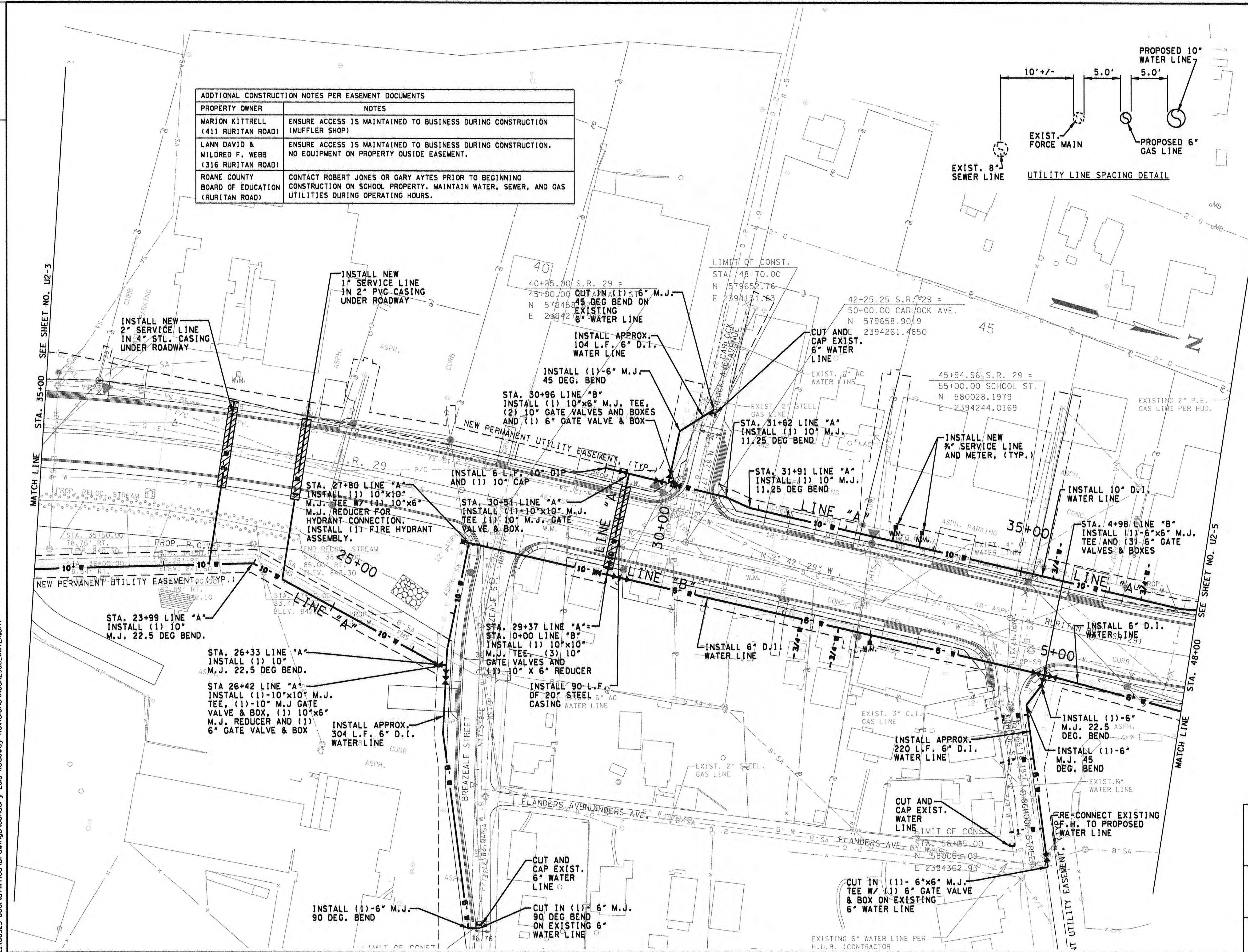


TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-2915B)	U2-4
		73035-3209-14	

ROANE CO.
 REV. 08-27-12:
 REVISED PER T.D.O.T COMMENTS.
 REV. 09-21-12:
 REVISED PER T.D.O.T
 CONSTRUCTION NUMBER CHANGE.
 REV. 04-25-13:
 REVISED PER T.D.O.T.
 ROADWAY REVISION

PROPERTY OWNER	NOTES
MARION KITTRELL (411 RURITAN ROAD)	ENSURE ACCESS IS MAINTAINED TO BUSINESS DURING CONSTRUCTION (MUFFLER SHOP)
LANN DAVID & MILDRED F. WEBB (316 RURITAN ROAD)	ENSURE ACCESS IS MAINTAINED TO BUSINESS DURING CONSTRUCTION. NO EQUIPMENT ON PROPERTY OUSIDE EASEMENT.
ROANE COUNTY BOARD OF EDUCATION (RURITAN ROAD)	CONTACT ROBERT JONES OR GARY AYLES PRIOR TO BEGINNING CONSTRUCTION ON SCHOOL PROPERTY. MAINTAIN WATER, SEWER, AND GAS UTILITIES DURING OPERATING HOURS.

UTILITY LINE SPACING DETAIL



HARRIMAN
UTILITY
BOARD

WATER LINE
RELOCATION

STA. 35+00.00 TO STA. 48+00.00
 SCALE: 1"=50'



UTILITIES INDEX

SHEET NAME

SHEET NUMBER

ESTIMATED UTILITY QUANTITIES U6-1
UTILITY RELOCATION BEGIN PROJ. TO STA. 21+00.00 U6-2
UTILITY RELOCATION STA. 21+00 TO STA.35+00 U6-3
UTILITY RELOCATION STA. 35+00 TO STA.48+00 U6-4
UTILITY RELOCATION STA. 48+00 TO END OF PROJECT U6-5

LEGEND:

- TEMPORARY LOCATION (BLUE)
- EXISTING TO REMAIN (ORANGE)
- EXISTING TO BE REMOVED OR RETIRED (GREEN)
- NEW INSTALLATION (RED)
- T (UG) —

NEW AT&T UNDERGROUND CABLE (DIRECT BURIED)
- T (OH) —

NEW AT&T OVERHEAD LINE
- == T (OH) ==

NEW AT&T SERVICE DROP
- ET (UG) —

EXISTING AT&T UNDERGROUND CABLE TO REMAIN
- ET (OH) —

EXISTING AT&T OVERHEAD LINE TO REMAIN
- == T (OH) ==

EXISTING AT&T SERVICE DROP TO REMAIN
- RT (UG) —

EXISTING AT&T UNDERGROUND CABLE TO BE REMOVED OR RETIRED
- RT (OH) —

EXISTING AT&T OVERHEAD LINE TO BE REMOVED OR RETIRED
- == T (OH) ==

EXISTING AT&T SERVICE DROP TO BE REMOVED OR RETIRED
- ⊙

EXISTING AT&T POLE TO REMAIN
- ⊙

EXISTING AT&T POLE TO BE REMOVED OR RETIRED
- NEW INSTALLATION OF AT&T POLE
- ⌵

NEW INSTALLATION OF AT&T POLE WITH GUY WIRE
- ⌵

EXISTING AT&T GUY WIRE TO REMAIN
- ⌵

EXISTING AT&T GUY WIRE TO BE REMOVED
- ⌵

NEW INSTALLTION OF AT&T GUY WIRE
- ✱

EXISTING ELECTRIC UTILITY POLE TO REMAIN
- ✱

EXISTING ELECTRIC UTILITY POLE TO BE REMOVED OR RETIRED
- ✱

NEW INSTALLATION OF ELECTRIC UTILITY POLE
- EXISTING AT&T PUSH BRACING TO REMAIN
- EXISTING AT&T PUSH BRACING TO BE REMOVED
- NEW AT&T PUSH BRACING
- TELE

EXISTING AT&T PULL BOX TO REMAIN
- TELE

EXISTING AT&T PULL BOX TO BE REMOVED OR RETIRED
- TELE

NEW INSTALLATION OF AT&T PULL BOX

ESTIMATED UTILITY QUANTITIES					
ITEM NO.	DESCRIPTION	UNIT	Project No. 1:		
			QUANTITY	% Utility	%Project
773-12.83	PLACE 1 1/4 IN TRIPLE EYE ANCHOR	EACH	22	0.00%	100.00%
773-12.84	PLACE 35FT POLE	EACH	1	0.00%	100.00%
773-12.85	PLACE 40FT POLE	EACH	1	0.00%	100.00%
773-12.86	PLACE 45FT POLE	EACH	1	0.00%	100.00%
773-12.87	PLACE 55FT POLE	EACH	1	0.00%	100.00%
773-12.88	REMOVE 30FT POLE	EACH	1	0.00%	100.00%
773-12.89	REMOVE 35FT POLE	EACH	10	0.00%	100.00%
773-12.90	REMOVE 40FT POLE	EACH	9	0.00%	100.00%
773-12.91	REMOVE 45FT POLE	EACH	2	0.00%	100.00%
773-12.92	REMOVE 55FT POLE	EACH	1	0.00%	100.00%
773-12.93	REMOVE PUSH BRACE	EACH	2	0.00%	100.00%

GENERAL NOTES:

- ALL PLACEMENT OF DUCT BANKS & DIRECT BURIED CABLES AT 36" DEPTH TO FINAL GRADE IN CUT, 36" DEPTH TO CURRENT GRADE IN FILLS.
- HAND HOLE ARE 48" L x 36" W x 30" D, FIBERGLASS WITH DOUBLE LIDS.
- FOR DIRECT BURIED CABLES AT TELEPHONE PEDESTALS LOOP CABLES 5' ABOVE GROUND LEVEL. DO NOT PLACE IN HAND HOLES UNLESS NOTED.
- CABLE MARKERS EVERY 500' AND LINE OF SIGHT FROM EACH MARKER.

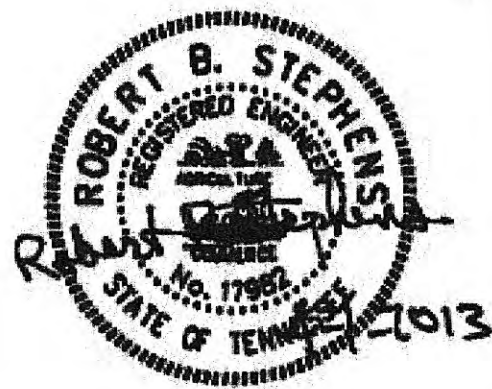
UTILITY COMPANY CONTACT

AT&T TENNESSEE
9733 PARKSIDE DRIVE
KNOXVILLE, TN. 37922
DAVID OVERMAN
865-539-8579
EMAIL: DAVID.OVERMAN@ATT.COM

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29 (58)	U6-1

S.R. 29
73035-3209-14
PIN NO. 103779.00

ROANE



COORDINATE VALUES ARE NAD/83(1995)
AND ARE DATUM ADJUSTED BY THE
FACTOR 1.0001 & TIED TO THE TGRN.

BWSC | BARGE
WAGGONER
SUMNER &
CANNON, INC.
10133 Sharrill Blvd., Suite 200, Knoxville, Tennessee 37932
PHONE: (865) 631-2800 FAX: (865) 673-0534
BWSC PROJECT NO. 32119-22

AT&T
TENNESSEE

ESTIMATED
UTILITY
QUANTITIES
SCALE: NONE

ADDITIONAL CONSTRUCTION NOTES PER EASEMENT DOCUMENTS	
PROPERTY OWNER	NOTES
ANN MCKINNEY & SHELBY SIKES (107 PANSY HILL RD)	BEAUTY SHOP IS CLOSED ON SATURDAYS, SUNDAYS, AND MONDAYS. CONTRACTOR SHALL NOTIFY PROPERTY OWNERS BEFORE BEGINNING WORK IN FRONT OF THE SALON SO THEY CAN DIRECT CUSTOMERS WHERE TO PARK (TUESDAY - FRIDAY).
HASKELL HILL (230 RURITAN ROAD)	CONTRACTOR TO ENSURE TENANTS HAVE ACCESS TO THE BACK OF THE BUILDING DURING CONSTRUCTION.
DONALD & PRECILLA LOMBARD (182 STATE STREET)	CONTRACTOR TO MAINTAIN ACCESS TO BARBER SHOP AND PARKING LOT DURING CONSTRUCTION.

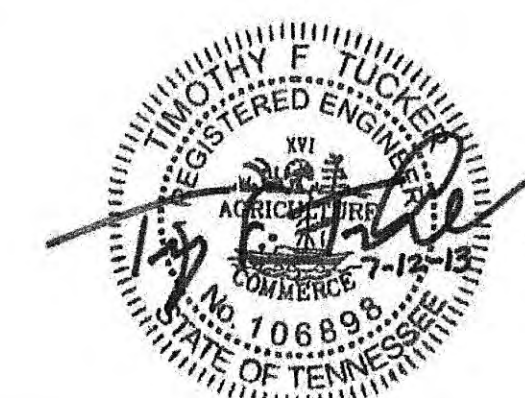
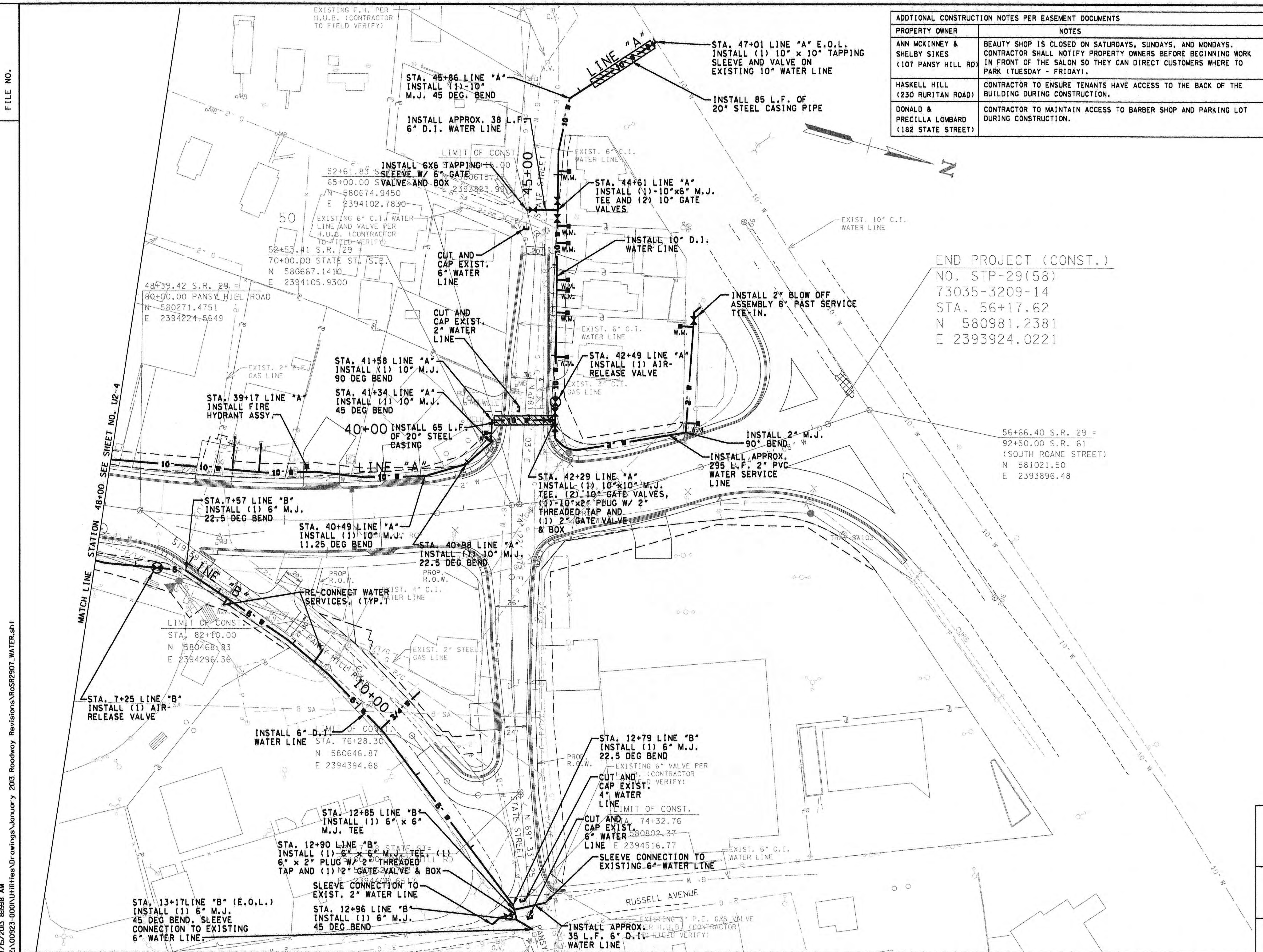
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U2-
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
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CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13;
REVISED PER T.D.O.T.
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HARRIMAN
UTILITY
BOARD

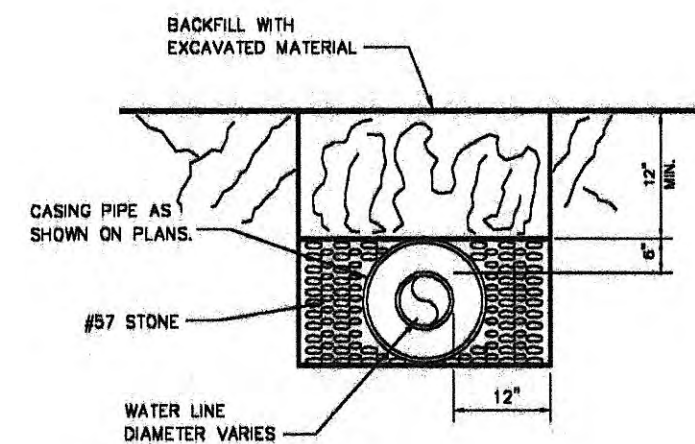
WATER LINE
RELOCATION

STA. 48+00.00 TO END OF PROJ.
SCALE: 1"=50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U2-6
		73035-3209-14	

ROANE CO.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.



NOTE:
1. SEE SHEET 2F OF ROADWAY PLANS FOR STREAM SECTION DETAILS

TYPICAL CREEK CROSSING
NOT TO SCALE

MH-16
STA. 1+31.75 LINE H
TOP EL. 824.94
INV. IN = 816.95 (12")
INV. OUT = 816.85 (12")
 $\Delta = 31'30'24"$ RT. LINE "H"

STREAM CROSSING
SEE DETAIL
INSTALL (1) 6" x 6"
TAPPING SLEEVE AND VALVE,
(1) 6" 90° M.J. BEND

INSTALL APPROX. 30 LF
12" STEEL CASING BENEATH
STREAM.

INSTALL APPROX. 45 LF
6" DIP WATER LINE, MIN
24" COVER BENEATH
STREAM INVERT.
SEE DETAIL THIS SHEET.

INSTALL (1) 6" x 6"
TAPPING SLEEVE AND VALVE,
(1) 6" 90° M.J. BEND

CONSTRUCT PROP. 6' x 5'
BOX CULVERT ADJACENT TO
EXIST. 6' x 5' BOX
CULVERT.
PROP. CULVERT TO MATCH
EXISTING CULVERT TOP DECK
ELEVATION AND GRADE.

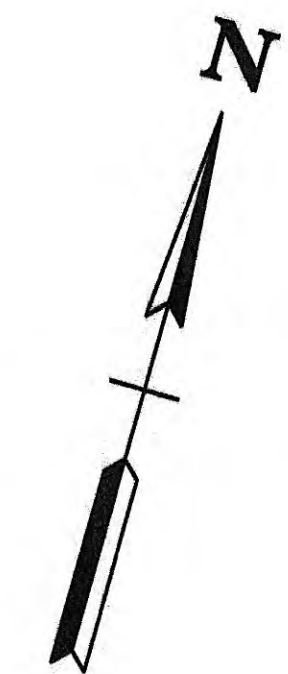
PROPOSED 12" PVC
SANITARY
PRES. R.O.W.
SA. MH.
TOP 824.94
INV. 817.34 (NE)
INV. 817.30 (SW)

CUT AND CAP EXIST.
6" WATER LINE. RECONNECT 6" DIP
SERVICE SEE NOTE 2.

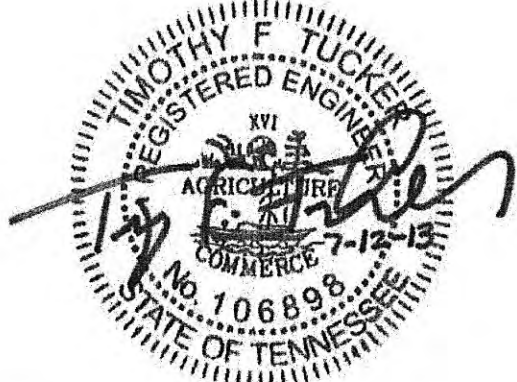
MH-17
STA. 1+54.82 LINE H
TOP EL. 825.36
INV. IN = 817.43 (10")
INV. IN = 817.10 (6")
INV. OUT = 817.00 (12")

SA. MH.
TOP 832.05
INV. 828.20 (NW)
INV. 822.25 (NW) (DROP)
INV. 821.65 (SE)
INV. 821.55 (SW)

SA. MH.
TOP 830.13
INV. 822.77 (NE)
INV. 822.74 (NW)



NOTE:
NO CONSTRUCTION ACTIVITY OF ANY KIND
IS TO BE ALLOWED ON TRACT #100 -
TENNESSEE VALLEY AUTHORITY (TVA)



HARRIMAN
UTILITY
BOARD

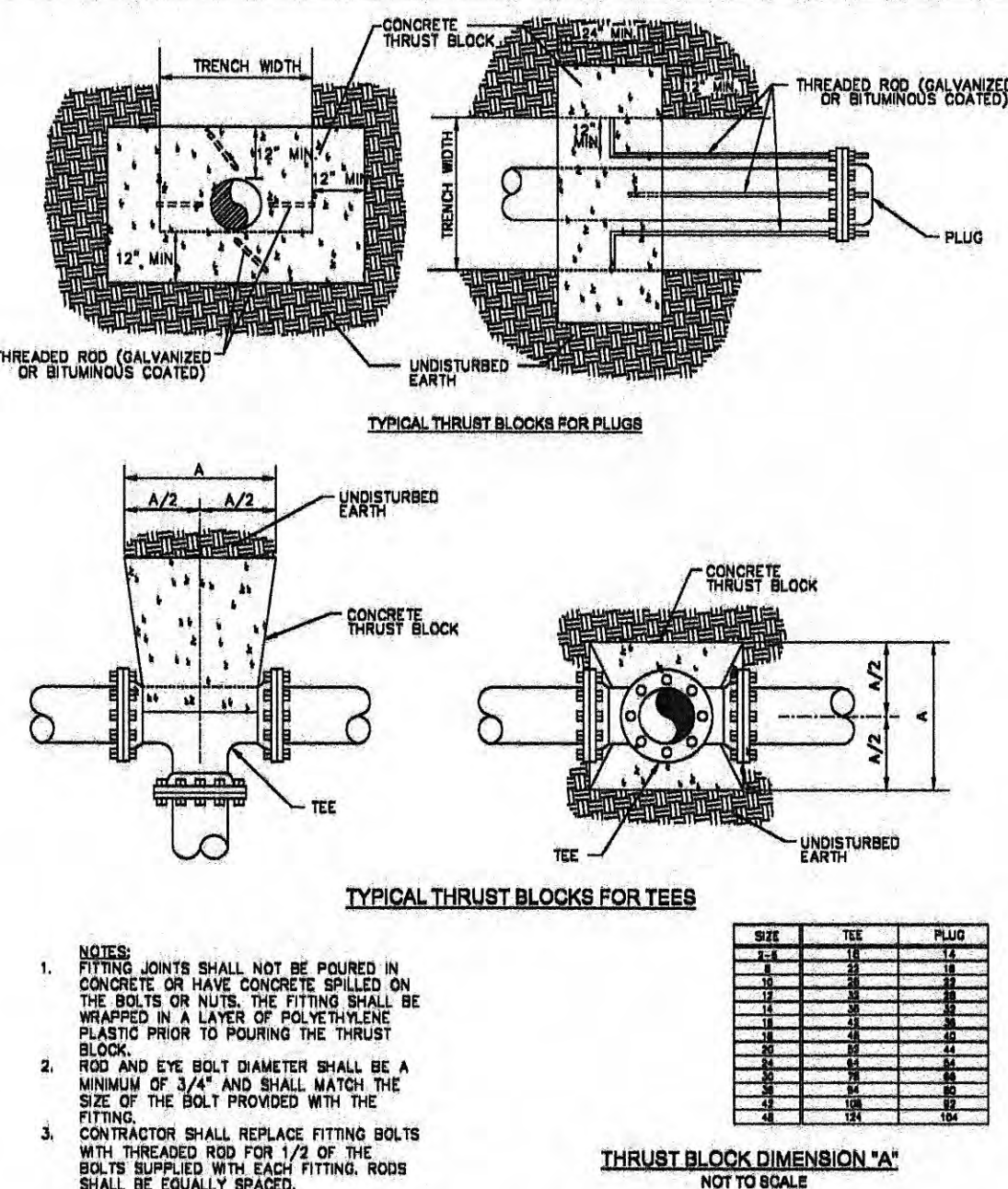
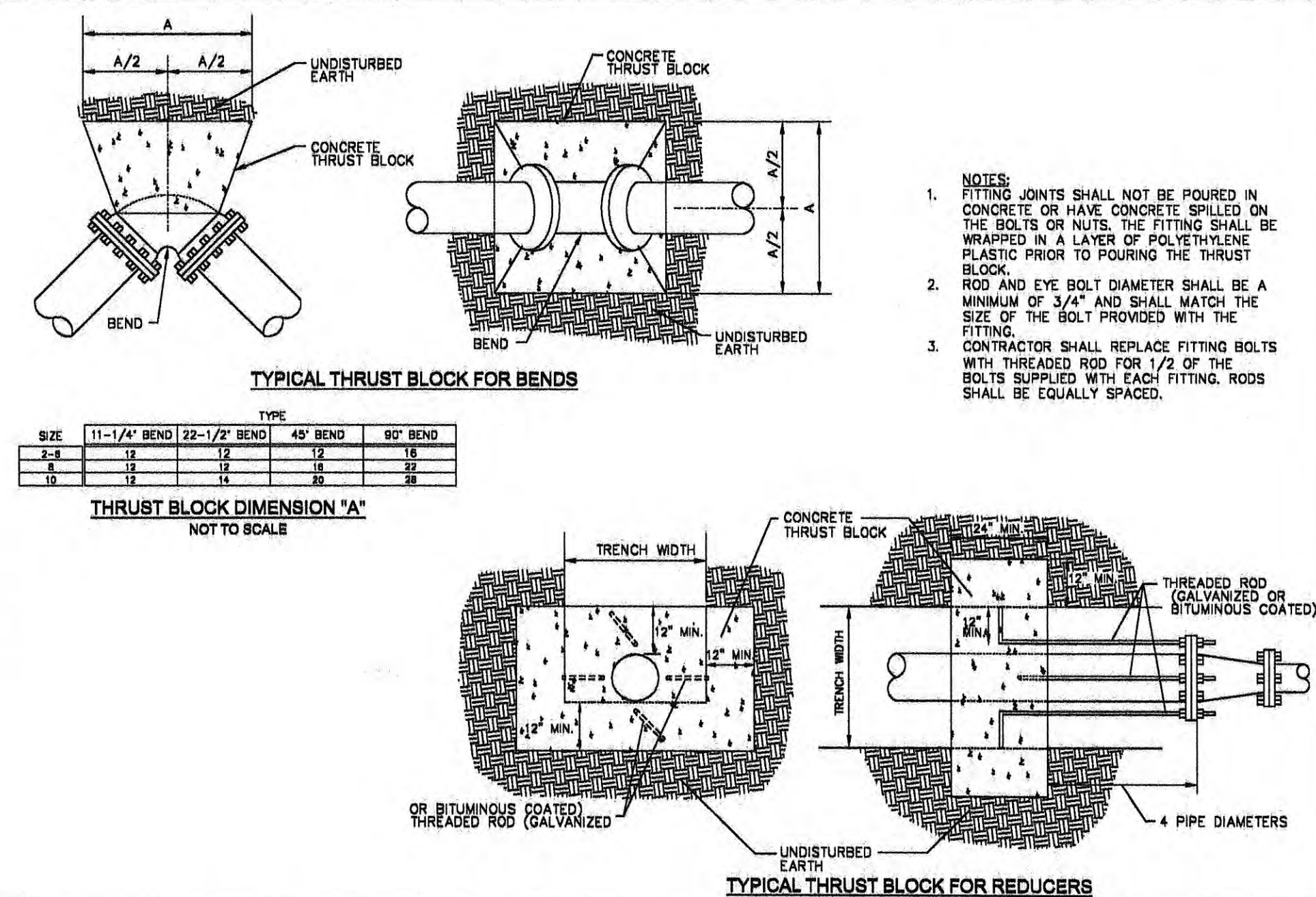
WATER LINE
RELOCATION

HASSLER MILL ROAD AND
BAUMGARTNER ROAD
SCALE: 1"=50'





- NOTES:**
1. EDGE TO BE SAWED WITH A CONCRETE SAW TO A NEAT SQUARED EDGE. BROOMED CLEAN OF DUST BEFORE TACK COAT IS APPLIED.
 2. EDGES TO BE TACKED WITH EMULSIFIED ASPHALT TACK CRS-I OR CRS-II
 3. CUTTING AND REPAIRING EXISTING PAVEMENT CONCRETE OR GRAVEL SHALL BE IN ACCORDANCE WITH OWNER'S REQUIREMENTS



Pipe Size (Inches)			
Fitting/Valve Type	2	6	8 OR 10
Minimum Restrained Length (Feet)			
Plug	50	75	105
Inline Valve	50	75	105
Tee	20	20	20
90° Bend	16	20	32
45° Bend	16	20	20
22.5° Bend	16	20	20
11.25° Bend	16	20	20
5° Bend	16	20	20

- NOTES:**
1. CONTRACTOR SHALL USE RESTRAINED JOINT FITTINGS OR REACTION BLOCKING FOR EACH FITTING INSTALLED ON THE PROJECT. REACTION BLOCKINGS SHALL ONLY BE USED FOR FITTINGS AT TIE-IN CONNECTIONS.
 2. WHERE RESTRAINED JOINT FITTINGS ARE REQUIRED BY THE PLANS OR SPECIFICATIONS, RESTRAINED JOINT FITTINGS MUST BE INSTALLED AS REQUIRED BY THE TABLES AND NOTES FOUND WITHIN THE PLANS AND SPECIFICATIONS.
 3. MECHANICAL RESTRAINED JOINT FITTINGS SHALL BE "MEGALUG" AS MANUFACTURED BY EDECO IRON, INC. OR APPROVED CLONE.
 4. CONTRACTOR SHALL INSTALL RESTRAINING CASKETS FOR PUSH-ON JOINT PIPE A MINIMUM DISTANCE FROM EACH VALVE OR FITTING AS REQUIRED IN THE ABOVE TABLE.
 5. RESTRAINING CASKETS FOR PUSH-ON JOINT PIPE SHALL BE UTILITY OWNER SPECIFICATIONS.

THRUST RESTRAINT JOINT TABLE



SIZE OF VALVE	CONCRETE CU. FT.
2" & 2 1/4"	1.0
3" & 4"	1.0
6"	1.3
8"	1.5
10"	1.8



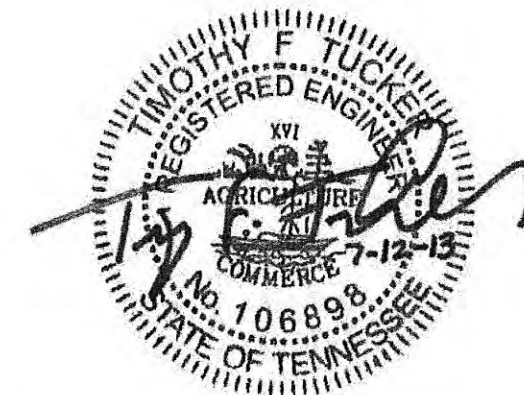
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U2-7
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
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REV. 09-21-12;
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
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ROADWAY REVISION.



HARRIMAN
UTILITY
BOARD

WATER LINE
RELOCATION

TYPICAL DETAILS
SCALE: AS SHOWN

INDEX OF DRAWINGS

SHT. NUMBER	SHT. NAME
U3-1	ESTIMATED QUANTITIES (SEWER)
U3-2	UTILITY RELOCATION PLAN (SEWER)
U3-3	UTILITY RELOCATION PLAN (SEWER)
U3-4	UTILITY RELOCATION PLAN (SEWER)
U3-5	UTILITY RELOCATION PLAN (SEWER)
U3-6	UTILITY RELOCATION PLAN (SEWER)
U3-7	UTILITY RELOCATION PROFILE (SEWER)
U3-8	UTILITY RELOCATION PROFILE (SEWER)
U3-9	TYPICAL SEWER DETAILS

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	PERCENT UTILITY	PERCENT PROJECT
① 797-01.15	10IN EPOXY COATED DIP FORCE MAIN	L.F.	45	0%	100%
① 797-05.01	8IN DIP GRAVITY SEWER 0FT-6FT DEPTH	L.F.	175	0%	100%
① 797-05.02	8IN DIP GRAVITY SEWER 6FT-12FT DEPTH	L.F.	170	0%	100%
① 797-05.03	8IN DIP GRAVITY SEWER 12FT-18FT DEPTH	L.F.	110	0%	100%
① 797-05.09	12IN DIP GRAVITY SEWER 0FT-6FT DEPTH	L.F.	45	3.7%	96.3%
① 797-05.10	12IN DIP GRAVITY SEWER 6FT-12FT DEPTH	L.F.	685	6.3%	93.7%
① 797-05.11	12IN DIP GRAVITY SEWER 12FT-18FT DEPTH	L.F.	50	12.5%	87.5%
① 797-05.41	6IN DIP SERVICE LATERAL	L.F.	370	0%	100%
① 797-05.51	8IN PVC GRAVITY SEWER 0FT-6FT DEPTH	L.F.	45	0%	100%
① 797-05.52	8IN PVC GRAVITY SEWER 6FT-12FT DEPTH	L.F.	1600	0%	100%
① 797-05.53	8IN PVC GRAVITY SEWER 12FT-18FT DEPTH	L.F.	435	0%	100%
① 797-05.60	12IN PVC GRAVITY SEWER 6FT-12FT DEPTH	L.F.	345	6.5%	93.5%
① 797-05.61	12IN PVC GRAVITY SEWER 12FT-18FT DEPTH	L.F.	70	14.3%	85.7%
② 797-06.64	BORE/JACK 16IN STEEL CASING PIPE-UNCON.	L.F.	130	0%	100%
② 797-06.67	BORE/JACK 24IN STEEL CASING PIPE-UNCON.	L.F.	255	0%	100%
③ 797-06.90	OPEN CUT 16IN STEEL CASING PIPE	L.F.	40	0%	100%
③ 797-06.93	OPEN CUT 24IN STEEL CASING PIPE	L.F.	30	0%	100%
④ 797-07.03	48IN MANHOLE 6FT-8FT DEPTH	EACH	2	0%	100%
④ 797-07.04	48IN MANHOLE 8FT-10FT DEPTH	EACH	7	0%	100%
④ 797-07.05	48IN MANHOLE 10FT-12FT DEPTH	EACH	4	0%	100%
④ 797-07.06	48IN MANHOLE 12FT-14FT DEPTH	EACH	4	0%	100%
⑤ 797-07.56	MANHOLE DROP CONNECTION ASSEMBLY	EACH	1	0%	100%
⑥ 797-08.01	DI FITTINGS	LB.	760	0%	100%
⑥ 797-08.05	6" PVC PIPE FOR SERVICE LATERAL	L.F.	1,000	0%	100%
⑥ 797-08.09	6" CLEAN OUT ASSEMBLY	EACH	15	0%	100%
⑦ 797-10.02	CONNECT 8IN SEWER TO EXIST. MANHOLE	EACH	6	0%	100%
⑦ 797-10.03	CONNECT 10-18IN SEWER TO EXIST. MANHOLE	EACH	4	0%	100%
⑦ 797-10.19	CONNECT TO 10IN FORCE MAIN	EACH	2	0%	100%
⑧ 797-11.15	48" MH ADJUSTMENT INCREASE HEIGHT	V.L.F.	1	0%	100%
⑨ 797-11.25	RETIRED IN PLACE 48" MANHOLE	EACH	10	0%	100%

- FOOTNOTES:
- ① INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT FOR COMPLETE EXCAVATION INCLUDING BUT NOT LIMITED TO BEDDING, BACKFILLING, THRUST BLOCKING, PIPE FUSION, APPURTENANCES, FLOWABLE FILL, MAINTAINING THE TRENCH, TESTING, CHECK DAMS, AND ANY OTHER LABOR OR MATERIAL REQUIRED TO COMPLETE FOR GRAVITY SEWER LINES OR FORCE MAINS AS SPECIFIED ON THE PLANS. DUCTILE IRON PIPE GRAVITY SEWER LINES SHALL BE EPOXY LINED.
- ② INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT INCLUDING BUT NOT LIMITED TO CASING PIPE, PIPE SPACERS, CASING END SEALS, ANY OTHER APPURTENANCE TO COMPLETE THE WORK AS SPECIFIED ON THE PLANS, AND TRAFFIC CONTROL. IF CASING PIPE HAS CARRIER PIPE, THE CARRIER PIPE SHALL BE PAID AT THE OPEN CUT ITEM.
- ③ INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT INCLUDING BUT NOT LIMITED TO CASING PIPE, PIPE SPACERS, CASING END SEALS, STONE BACKFILL, TEMPORARY PAVEMENT, AND ANY OTHER APPURTENANCE TO COMPLETE THE WORK AS SPECIFIED ON THE PLANS, AND TRAFFIC CONTROL.
- ④ INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY FOR INSTALLATION OF PRECAST MANHOLE BOTH PREFORMED BASE OR OPEN BOTTOM (DOOHOUSE), INCLUDING BUT NOT LIMITED TO VENT ASSEMBLY (WHERE REQUIRED), CRUSHED STONE, PIPE TO MANHOLE CONNECTORS, EXCAVATION, BACKFILL, BUTYL RESIN GASKET, MANHOLE STEPS, ASPHALTIC WATERPROOFING, FRAME AND COVER, AND TRAFFIC CONTROL.
- ⑤ INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT, INCLUDING BUT NOT LIMITED TO MACHINERY, TOOLS, OR APPARATUS NECESSARY FOR INSTALLATION OF ASSEMBLIES AS DESCRIBED AND DETAILED IN THE PLANS AND SPECS.
- ⑥ INCLUDES FITTINGS, GLANDS AND RESTRAINT DEVICES DESCRIBED IN POUNDS.
- ⑦ INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY FOR CONNECTING TO AN EXISTING FORCE MAIN, SEWER LINE, PUMP STATION, OR MANHOLE AS SPECIFIED ON PLANS, INCLUDING TRAFFIC CONTROL.
- ⑧ INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT FOR INCREASING OR DECREASING HEIGHT OF MANHOLE TO FINISHED ROAD GRADE, INCLUDING BUT NOT LIMITED TO ADDITION OR REMOVAL OF BARREL SECTIONS OR FRAME RINGS AND ADJUSTMENTS TO FRAME AND COVER.
- ⑨ INCLUDES ALL LABOR, EQUIPMENT, DISPOSAL OF WASTE MATERIAL, DRILLING HOLES IN BASE FOR PROPER DRAINAGE, REMOVAL OF NECESSARY BARREL SECTIONS FOR PROPER GRADE AND STONE BACKFILL.

UTILITY INFORMATION

UTILITY TITLE	HARRIMAN UTILITY BOARD
ADDRESS	P.O. BOX 434 HARRIMAN, TN. 37748
CONTACT PERSON	FRANKIE DAVIS
PHONE	(865) 882-3242

- GENERAL NOTES:
1. CONSTRUCTION OF THE SANITARY SEWER SHALL CONFORM TO THE UTILITY SPECIFICATIONS AND INFORMATION CONTAINED HEREIN.
2. ALL WORK SHALL BE PERFORMED BY A TENNESSEE LICENSED UTILITY CONTRACTOR.
3. UNDERGROUND UTILITIES INCLUDE, BUT ARE NOT LIMITED TO, WATER, SEWER, GAS, STEAM PIPING/DUCT WORK, ELECTRIC, COMMUNICATION SERVICES, STREET LIGHTING AND TRAFFIC DETECTOR LOOPS. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL SUCH FACILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL SUCH FACILITIES THAT ARE DAMAGED DURING CONSTRUCTION. PAYMENT FOR LOCATING, PROTECTING, COORDINATING AND RE-PAIRING EXISTING FACILITIES WILL BE INCLUDED IN OTHER ITEMS OF WORK AND NO ADDITIONAL COMPENSATION WILL BE MADE. ALL REPAIRS SHALL BE DONE IN ACCORDANCE WITH STANDARDS AND REQUIREMENTS OF THE UTILITY'S OWNER. UTILITY SUPPORT METHODS WILL BE SUBMITTED PRIOR TO CONSTRUCTION FOR APPROVAL.
4. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUITABLE SIGNAGE, BARRICADES, AND LIGHTS FOR PROTECTION OF TRAFFIC. ANY EXISTING ROAD SIGN REMOVED FOR CONSTRUCTION SHALL BE REPLACED BY THE END OF THE WORKING DAY. TEMPORARY STOP SIGNS SHALL BE ERRECTED PRIOR TO REMOVAL OF PERMANENT STOP SIGNS.
5. THE CONTRACTOR SHALL NOT CLOSE OR BLOCK ANY HIGHWAY, STREET, OR ROADWAY WITHOUT FIRST OBTAINING ALL REQUIRED PERMITS FROM THE GOVERNING ENTITY (TDOT, CITY, COUNTY, ETC...).
6. THE CONTRACTOR SHALL PROVIDE ACCESS TO UTILITY COMPANIES FOR MAINTENANCE AND WORK ON THEIR UTILITIES DURING THE COURSE OF WORK.
7. SURVEY MONUMENTS DISTURBED BY THE CONTRACTOR SHALL BE RESET AS DIRECTED BY THE RESIDENT PROJECT REPRESENTATIVE. PRIOR TO DISTURBANCE, CONTACT THE STATE RESIDENT PROJECT REPRESENTATIVE FOR MONUMENT INFORMATION.
8. CONTRACTOR SHALL VERIFY WORK IN FIELD AND SHALL SATISFY HIMSELF AS TO THE ACCURACY BETWEEN WORK SET FORTH ON THESE PLANS AND THE WORK REQUIRED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT PROJECT REPRESENTATIVE PRIOR TO THE START OF CONSTRUCTION.
9. THE EXISTING UTILITIES SHOWN AND INDICATED ON THE DRAWINGS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF EXISTING UNDERGROUND UTILITIES. ALL COSTS ASSOCIATED WITH POTHOLING WILL BE INCLUDED IN OTHER ITEMS OF WORK AND NO ADDITIONAL COMPENSATION WILL BE MADE THEREFORE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR DISRUPTION OF UTILITY SERVICE DURING CONSTRUCTION. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES IN THE PROJECT AREA PRIOR TO BEGINNING CONSTRUCTION.
10. THE CONTRACTOR SHALL PROVIDE SUPPORT OF EXISTING UTILITIES TO MAINTAIN SERVICE AND INTEGRITY.
11. THE CONTRACTOR SHALL NEATLY SAW CUT ALL ROADWAYS AND DRIVEWAYS PRIOR TO INSTALLING A PERMANENT PAVEMENT REPAIR.
12. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES DURING CONSTRUCTION.
13. INDICATED SCALES ARE BASED ON FULL SIZE DRAWINGS; IF DRAWINGS ARE REDUCED, SCALES MUST BE ADJUSTED ACCORDINGLY.
14. CONTRACTOR SHALL NOTIFY THE RESIDENT PROJECT REPRESENTATIVE 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
15. LOCATION OF EXISTING RIGHT-OF-WAY (R.O.W.) LINES AND PROPERTY LINES ARE APPROXIMATE.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PROJECT SITE RESULTING FROM THE CONTRACTOR'S CONSTRUCTION ACTIVITIES.
17. TREES THAT HAVE BEEN DAMAGED OR REMOVED, ASPHALT AND OTHER CONSTRUCTION DEBRIS SHALL BE REMOVED OFFSITE BY CONTRACTOR.
18. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE TO AND THROUGH EXISTING DRAINAGE FACILITIES. ANY CONSTRUCTION AROUND, THROUGH OR IN DRAINAGE PATHS SHALL NOT ALTER THE FLOW PATHS FROM EXISTING AFTER CONSTRUCTION IS COMPLETE.
19. CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR WORKING CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
20. WHEN EXCAVATION MUST OCCUR NEAR A UTILITY POLE, THE CONTRACTOR SHALL EMPLOY A LICENSED ELECTRICAL CONTRACTOR TO GUY, ANCHOR, BRACE, MECHANICALLY-HOLD, ETC., THE POLE THROUGHOUT THE EXCAVATION PROCESS AND UNTIL THE AREA CAN BE PROPERLY BACKFILLED AND COMPACTED TO PREVENT THE MOVEMENT OF THE POLE. IF THE EXCAVATION AFFECTS AN ANCHOR, THE POLE WILL NEED TO BE STABILIZED IN A SIMILAR MANNER UNTIL THE ANCHOR CAN BE REINSTALLED IN THE EXACT LOCATION. CONTRACTOR SHALL NOTIFY THE UTILITY OWNER NOT LESS THAN SEVEN (7) CALENDAR DAYS PRIOR TO EXCAVATION WITHIN TWENTY (20) FEET OF ANY POLE AND SHALL PROVIDE INFORMATION TO THE UTILITY OWNER PERTAINING TO THE METHOD THAT IS TO BE USED TO STABILIZE THE POLE, AS WELL AS THE NAME OF THE ELECTRICAL CONTRACTOR RESPONSIBLE FOR THE PORTION OF THE WORK.
21. SEWER LINE CROSSINGS UNDER S.R. 29 SHALL BE ENCASED WITH STEEL CASING AND BE INSTALLED BY OPEN CUT OR BORE AND JACK METHOD PER STATE RESIDENT PROJECT REPRESENTATIVE'S DISCRETION.
22. ALL INCIDENTAL WORK, INCLUDING LABOR AND MATERIALS, NECESSARY TO COMPLETE THE PROJECT AS SHOWN IN THE CONTRACT DOCUMENTS, FOR WHICH A SEPERATE PAY ITEM IS NOT SHOWN SHALL BE PERFORMED BY THE CONTRACTOR AND NO ADDITIONAL PAYMENT SHALL BE MADE. THE COST OF THIS WORK SHALL BE MERGED INTO THE UNIT PRICES BID FOR THE BID ITEMS SHOWN.

LEGEND	
	PROPOSED CENTERLINE
	PROP/EXIST. R.O.W.
	8" SA PROPOSED SANITARY SEWER
	PROPOSED STORM SEWER
	EXIST. PROPERTY LINE
	8" SA EXIST. SANITARY SEWER
	8" W EXIST. WATER LINE
	P/T EXIST. POWER LINE
	3" G EXIST. NATURAL GAS
	EXIST. STORM SEWER
	EXIST. STREAM
	EXIST. WATER METER
	EXIST. GAS METER
	EXIST. MAILBOX

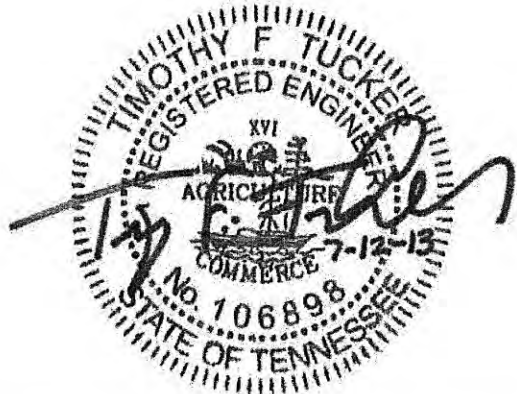
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-2915B)	U3-1
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.



HARRIMAN UTILITY BOARD
SANITARY SEWER LINE RELOCATION
ESTIMATED QUANTITIES



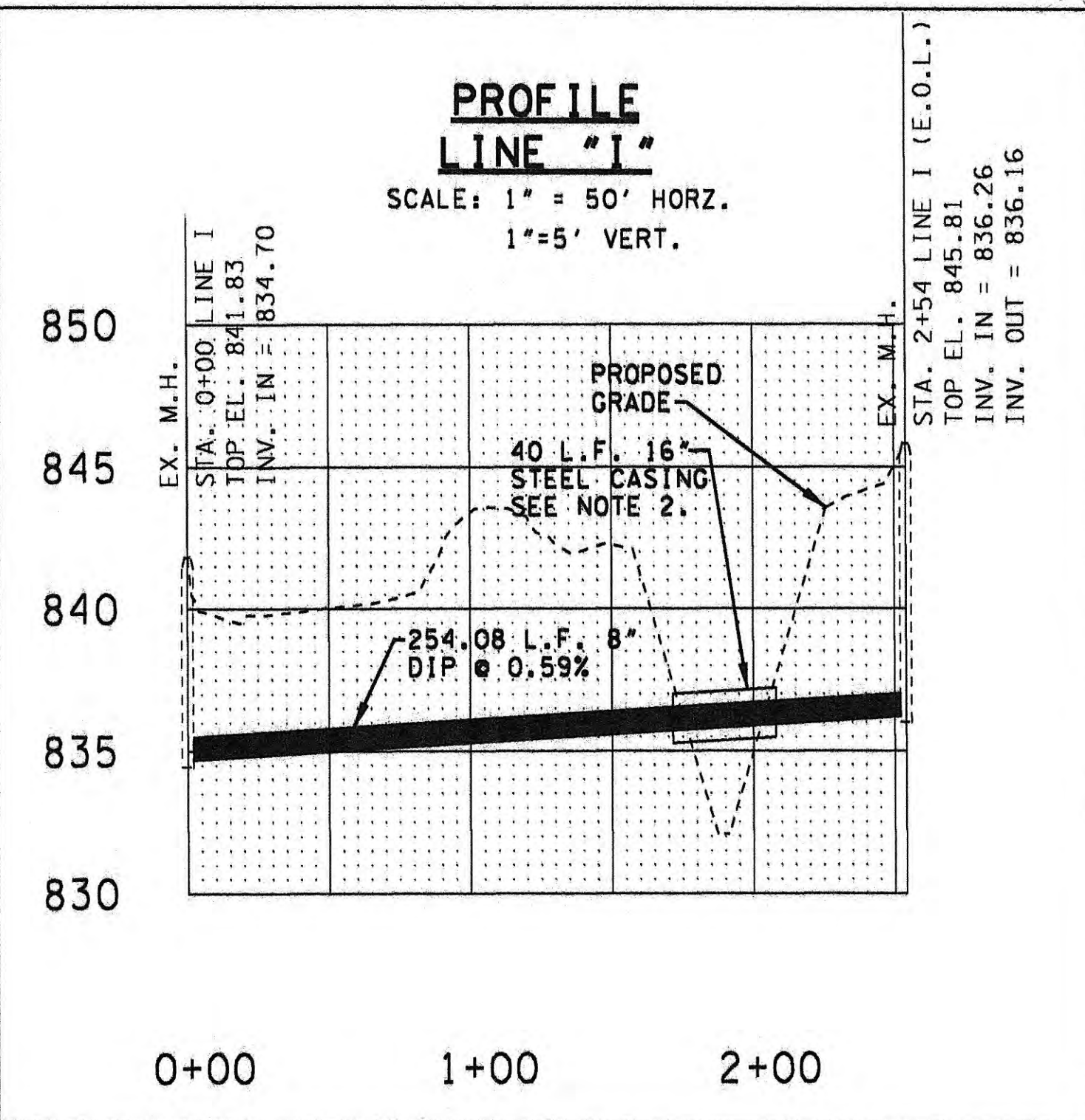
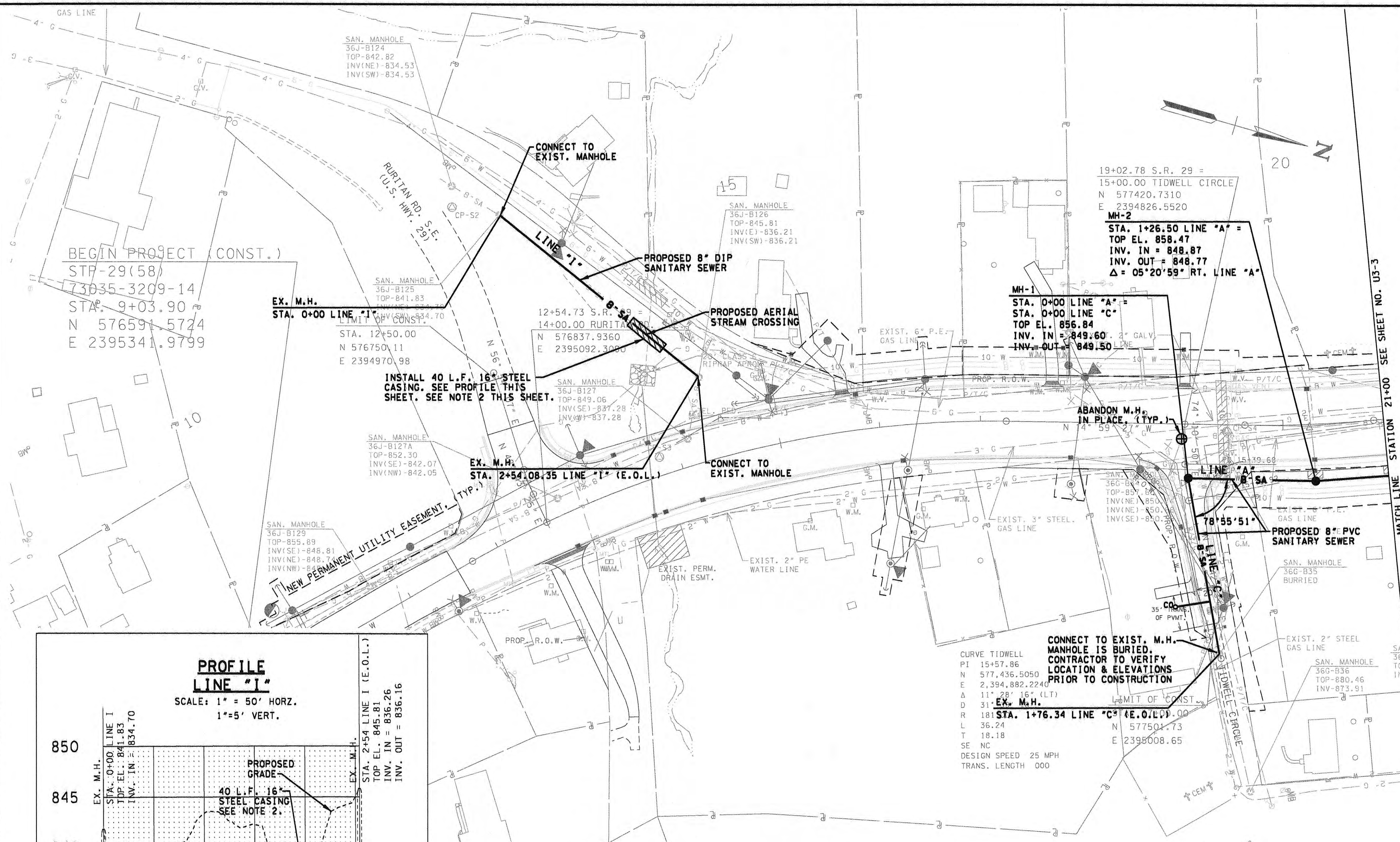
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CONST.	2013	STP-29(58)	U3-2
		73035-3209-14	

ROANE CO.

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REVISED PER T.D.O.T COMMENTS.

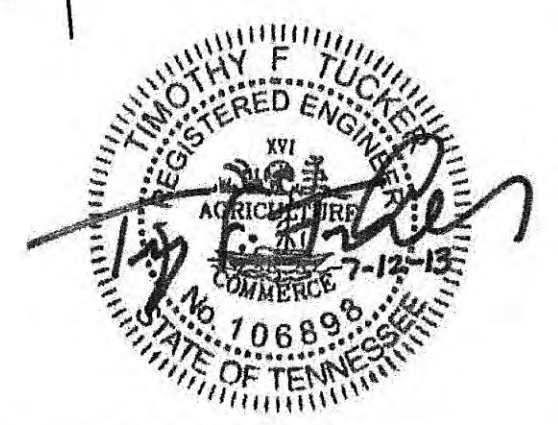
REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.



CONTROL POINTS COORDINATE LIST				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP- S1	576561.6641	2395325.8611	862.1500	GPS 73-029-03
CP- S2	576663.4159	2394818.5709	845.0000	GPS 73-029-04
CP- S3	576927.8931	2394999.9085	852.3500	GPS 73-029-05
CP- S4	577462.5819	2394822.2858	857.0900	GPS 73-029-06
CP- S5	577802.7604	2394685.3779	857.9600	GPS 73-029-07
CP- S6	578259.2949	2394478.2930	839.7300	GPS 73-029-08
CP- S7	578865.0073	2394344.9819	849.1900	GPS 73-029-09
CP- S8	579425.3815	2394241.1029	864.2000	GPS 73-029-10
CP- S9	580060.2802	2394271.7045	877.3200	GPS 73-029-11
CP- S10	580653.5569	2394170.8954	881.3500	GPS 73-029-12

- NOTE:
- CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF PRIVATE SEWER LATERALS PRIOR TO CONSTRUCTION TO ENSURE PROPER GRADE & LOCATION OF SEWER LATERAL EXTENSION TO PROPOSED SEWER MAIN.
 - 40 L.F. SHALL BE CONTINUOUS OR WELDED. MIN. YIELD STRENGTH 42,000 PSI.



HARRIMAN
UTILITY
BOARD

SANITARY
SEWER LINE
RELOCATION

BEGIN PROJ. TO STA. 21+00.00
SCALE: 1"=50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U3-3
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

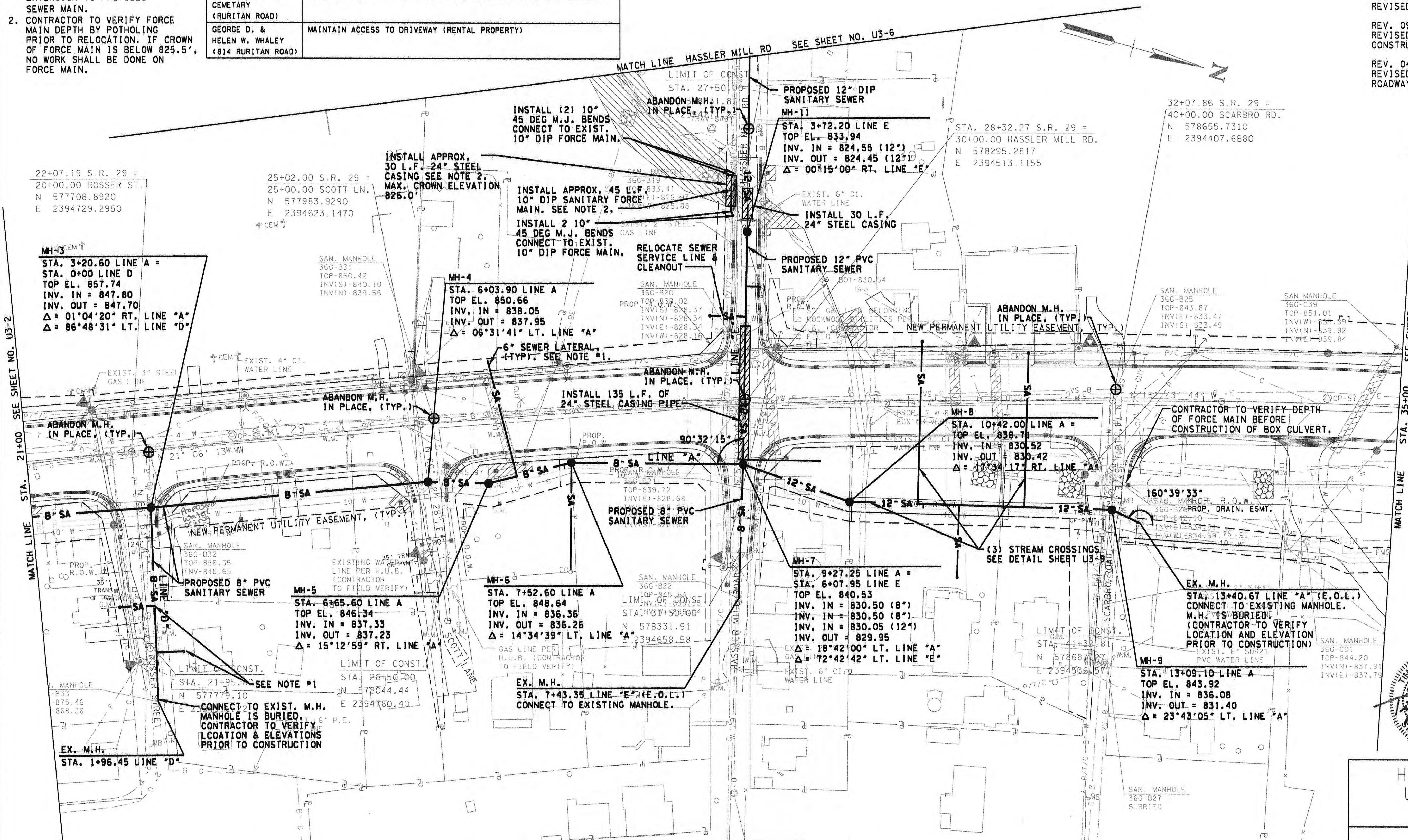
REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.

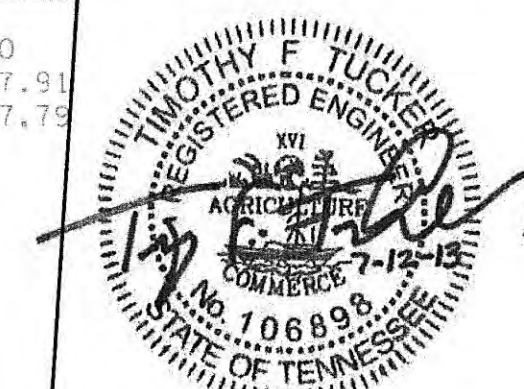
NOTE:

1. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF PRIVATE SEWER LATERALS PRIOR TO CONSTRUCTION TO ENSURE PROPER GRADE & LOCATION OF SEWER LATERAL EXTENSION TO PROPOSED SEWER MAIN.
2. CONTRACTOR TO VERIFY FORCE MAIN DEPTH BY POT-HOLING PRIOR TO RELOCATION. IF CROWN OF FORCE MAIN IS BELOW 825.5', NO WORK SHALL BE DONE ON FORCE MAIN.

ADDITIONAL CONSTRUCTION NOTES PER EASEMENT DOCUMENTS	
PROPERTY OWNER	NOTES
REBECCA A. BROWN (839 RURITAN ROAD)	CONTACT BECKY BROWN 2 WEEKS PRIOR TO WORKING ON PROPERTY. TRY TO WORK ON PROPERTY DURING TIMES THE BUSINESS IS CLOSED (JANUARY - FEBRUARY OR JULY - AUGUST). BE CAREFUL NOT TO DAMAGE FRENCH DRAIN NEAR NEW PROPERTY LINE. NO EQUIPMENT IS TO BE DRIVEN ON CONCRETE PARKING AREA OUTSIDE OF EASEMENT.
NEW WILLARD PARK CEMETARY (RURITAN ROAD)	CARE MUST BE TAKEN TO ENSURE THAT NO GRAVES WILL BE DISTURBED.
GEORGE D. & HELEN W. WHALEY (814 RURITAN ROAD)	MAINTAIN ACCESS TO DRIVEWAY (RENTAL PROPERTY)



STA. 35+00
MATCH LINE
SEE SHEET NO. U3-4



HARRIMAN
UTILITY
BOARD

SANITARY
SEWER LINE
RELOCATION

STA. 21+00.00 TO STA. 35+00.00
SCALE: 1"=50'



ADDITIONAL CONSTRUCTION NOTES PER EASEMENT DOCUMENTS	
PROPERTY OWNER	NOTES
MARION KITTRELL (411 RURITAN ROAD)	ENSURE ACCESS IS MAINTAINED TO BUSINESS DURING CONSTRUCTION (MUFFLER SHOP)
LANN DAVID & MILDRED F. WEBB (316 RURITAN ROAD)	ENSURE ACCESS IS MAINTAINED TO BUSINESS DURING CONSTRUCTION. NO EQUIPMENT ON PROPERTY OUTSIDE EASEMENT.
ROANE COUNTY BOARD OF EDUCATION (RURITAN ROAD)	CONTACT ROBERT JONES OR GARY AYTES PRIOR TO BEGINNING CONSTRUCTION ON SCHOOL PROPERTY. MAINTAIN WATER, SEWER, AND GAS UTILITIES DURING OPERATING HOURS.

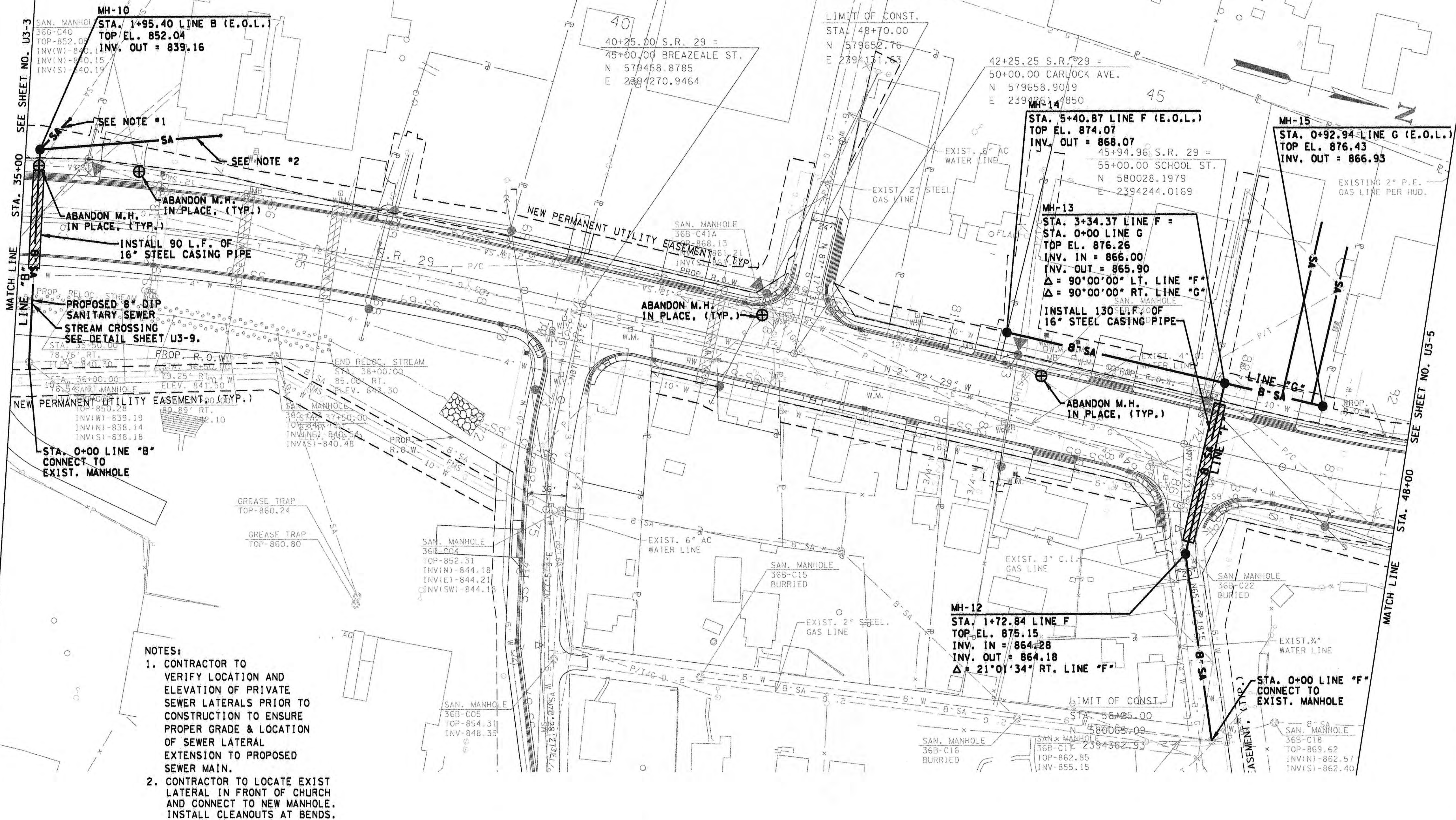
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U3-4
		73035-3209-14	

ROANE CO.

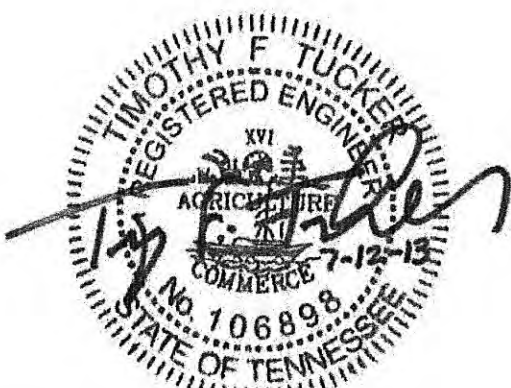
REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T.
ROADWAY REVISION.



- NOTES:
1. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF PRIVATE SEWER LATERALS PRIOR TO CONSTRUCTION TO ENSURE PROPER GRADE & LOCATION OF SEWER LATERAL EXTENSION TO PROPOSED SEWER MAIN.
 2. CONTRACTOR TO LOCATE EXIST LATERAL IN FRONT OF CHURCH AND CONNECT TO NEW MANHOLE. INSTALL CLEANOUTS AT BENDS.

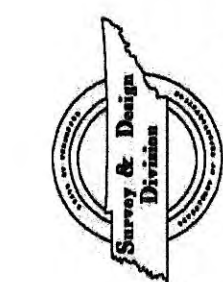


HARRIMAN
UTILITY
BOARD

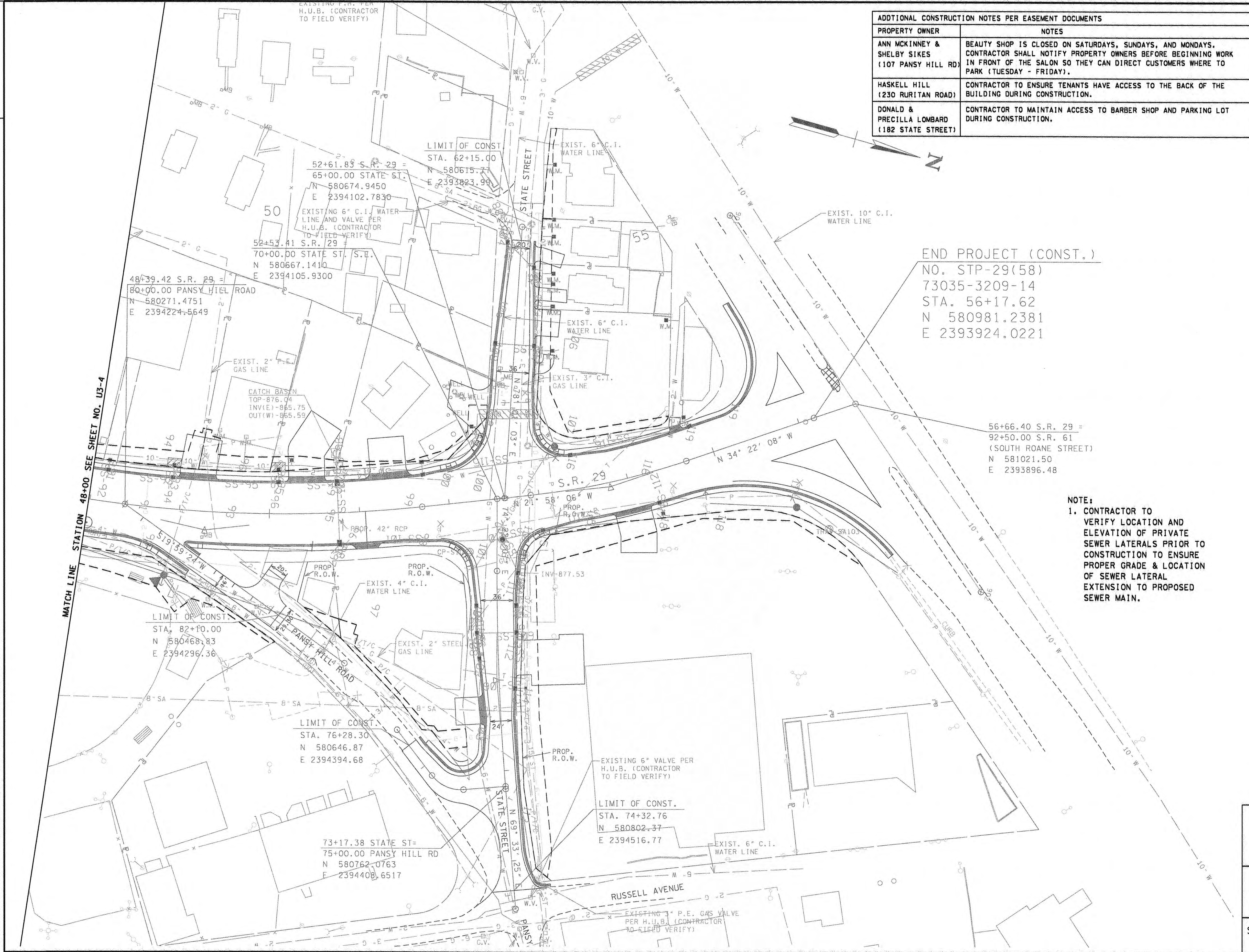
SANITARY
SEWER LINE
RELOCATION

STA. 35+00.00 TO STA. 48+00.00
SCALE: 1"=50'





7/5/2013 8:44:05 AM
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ADDITIONAL CONSTRUCTION NOTES PER EASEMENT DOCUMENTS	
PROPERTY OWNER	NOTES
ANN MCKINNEY & SHELBY SIKES (107 PANSY HILL RD)	BEAUTY SHOP IS CLOSED ON SATURDAYS, SUNDAYS, AND MONDAYS. CONTRACTOR SHALL NOTIFY PROPERTY OWNERS BEFORE BEGINNING WORK IN FRONT OF THE SALON SO THEY CAN DIRECT CUSTOMERS WHERE TO PARK (TUESDAY - FRIDAY).
HASKELL HILL (230 RURITAN ROAD)	CONTRACTOR TO ENSURE TENANTS HAVE ACCESS TO THE BACK OF THE BUILDING DURING CONSTRUCTION.
DONALD & PRECILLA LOMBARD (182 STATE STREET)	CONTRACTOR TO MAINTAIN ACCESS TO BARBER SHOP AND PARKING LOT DURING CONSTRUCTION.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U3-5
		73035-3209-14	

ROANE CO.

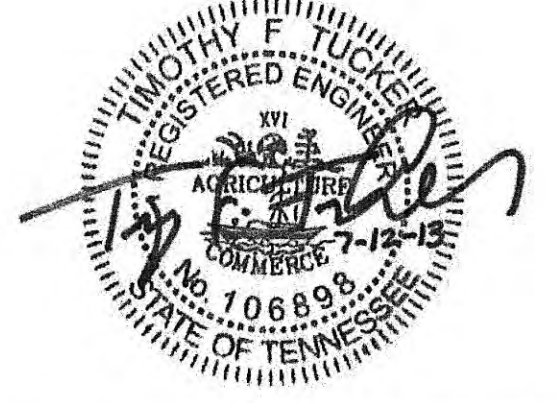
REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.

END PROJECT (CONST.)
NO. STP-29(58)
73035-3209-14
STA. 56+17.62
N 580981.2381
E 2393924.0221

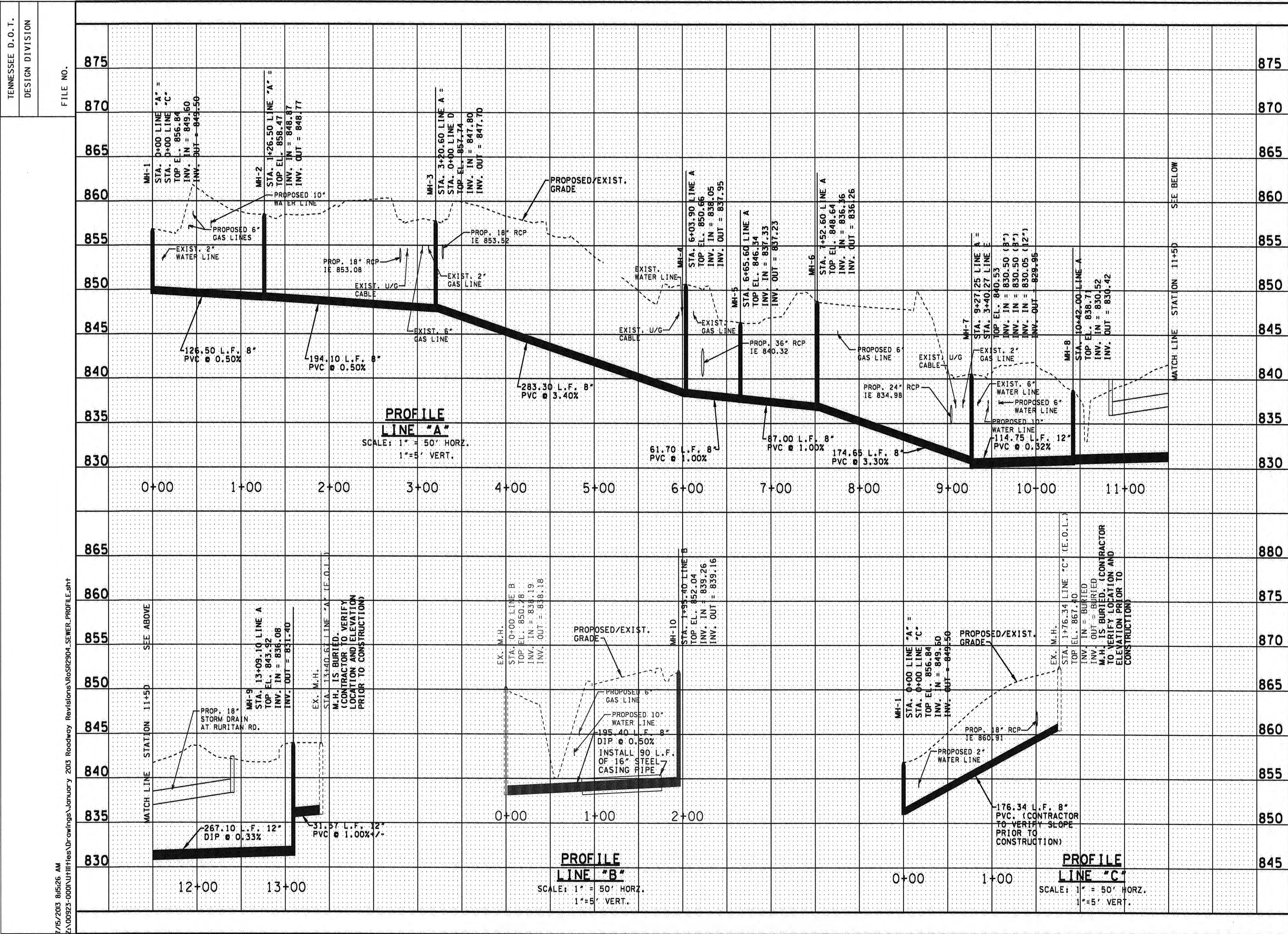
NOTE:
1. CONTRACTOR TO
VERIFY LOCATION AND
ELEVATION OF PRIVATE
SEWER LATERALS PRIOR TO
CONSTRUCTION TO ENSURE
PROPER GRADE & LOCATION
OF SEWER LATERAL
EXTENSION TO PROPOSED
SEWER MAIN.



HARRIMAN
UTILITY
BOARD

SANITARY
SEWER LINE
RELOCATION

STA. 48+00.00 TO END OF PROJ.
SCALE: 1"=50'



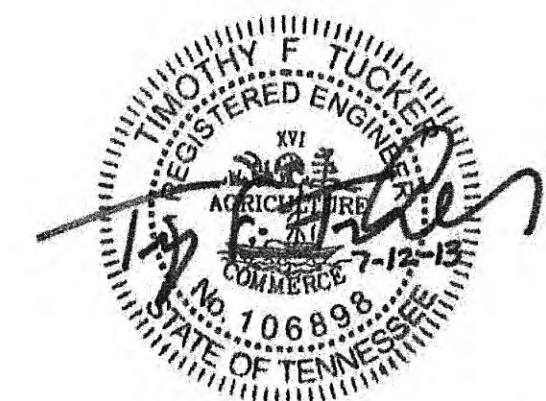
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CONST.	2013	STP-29(58)	U3-7
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
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REV. 09-21-12:
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CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.



HARRIMAN
UTILITY
BOARD

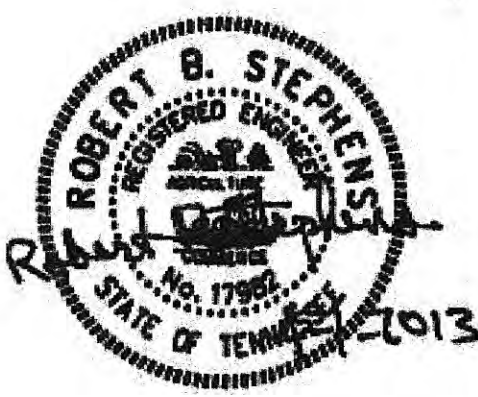
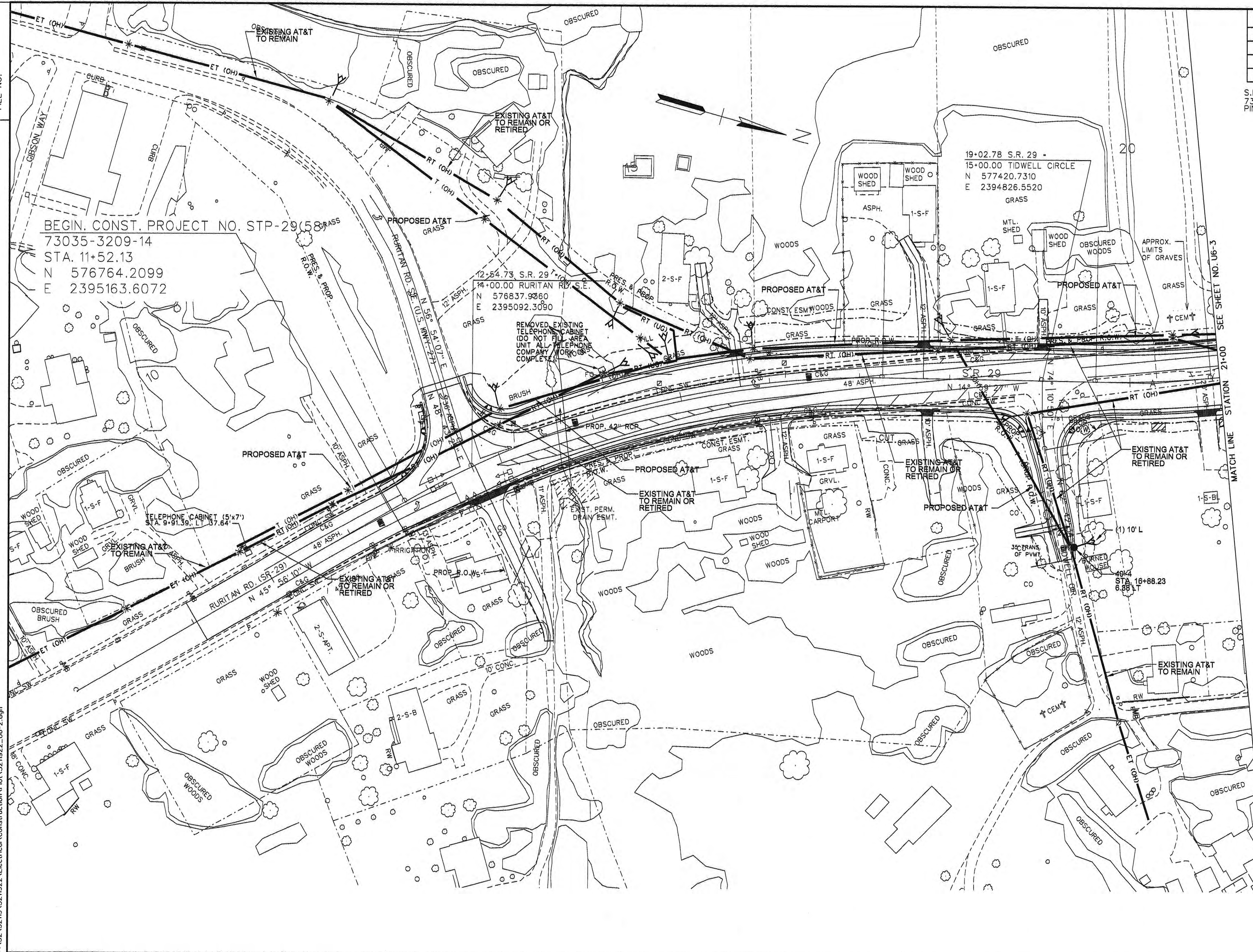
SANITARY
SEWER LINE
RELOCATION

PROFILES
SCALE: AS SHOWN

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29 (58)	U6-2

S.R. 29
73035-3209-14
PIN NO. 103779.00
ROANE



COORDINATE VALUES ARE NAD/83(1995)
AND ARE DATUM ADJUSTED BY THE
FACTOR 1.0001 & TIED TO THE TGRN.

BWSC
BARGE WADSWORTH
SUMNER & CANNON, INC.
1033 Sherrill Blvd., Suite 200, Knoxville, Tennessee 37932
PHONE: (865) 637-2800 FAX: (865) 637-8354
BWSC PROJECT NO. 32119-22

AT&T
TENNESSEE
**UTILITY
RELOCATION**
BEGIN PROJ. TO
STA. 21+00.00
SCALE: 1"=50'

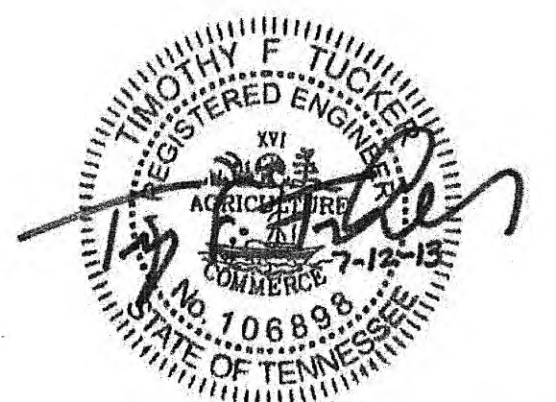
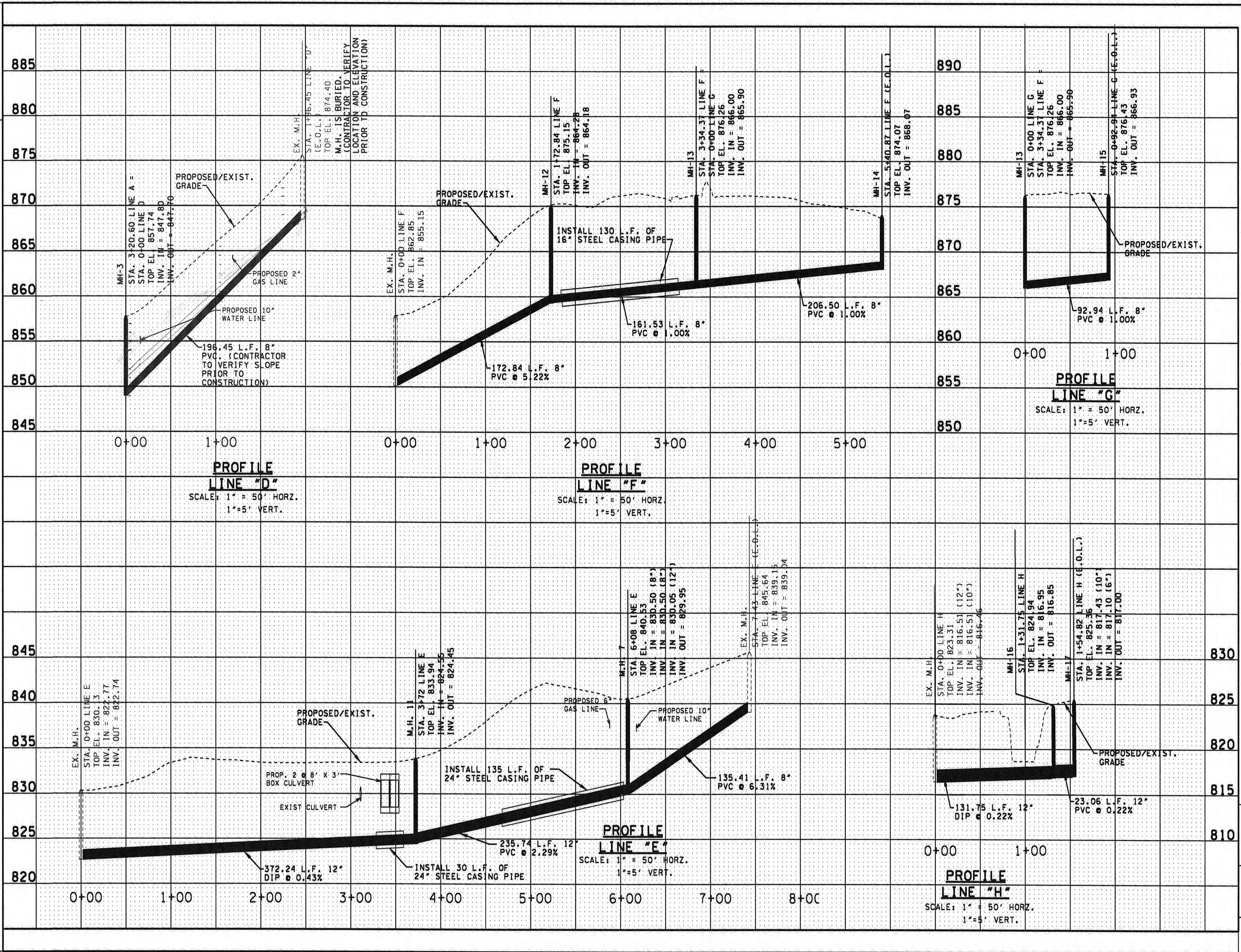
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CONST.	2013	STP-29(58)	U3-8
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
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REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.

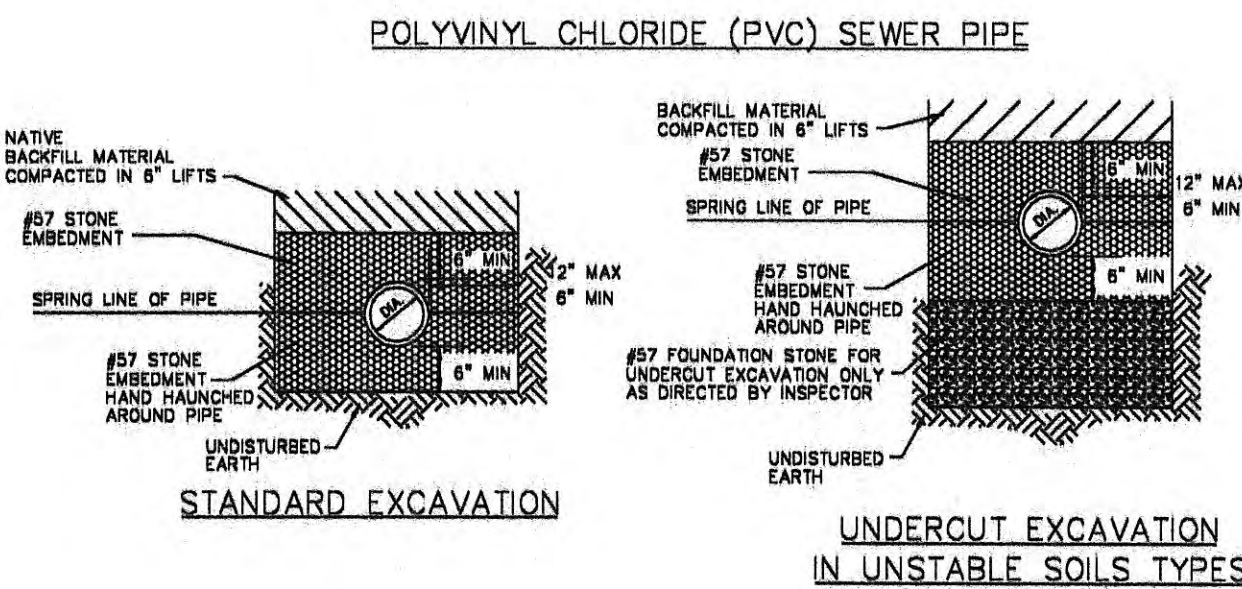


HARRIMAN
UTILITY
BOARD

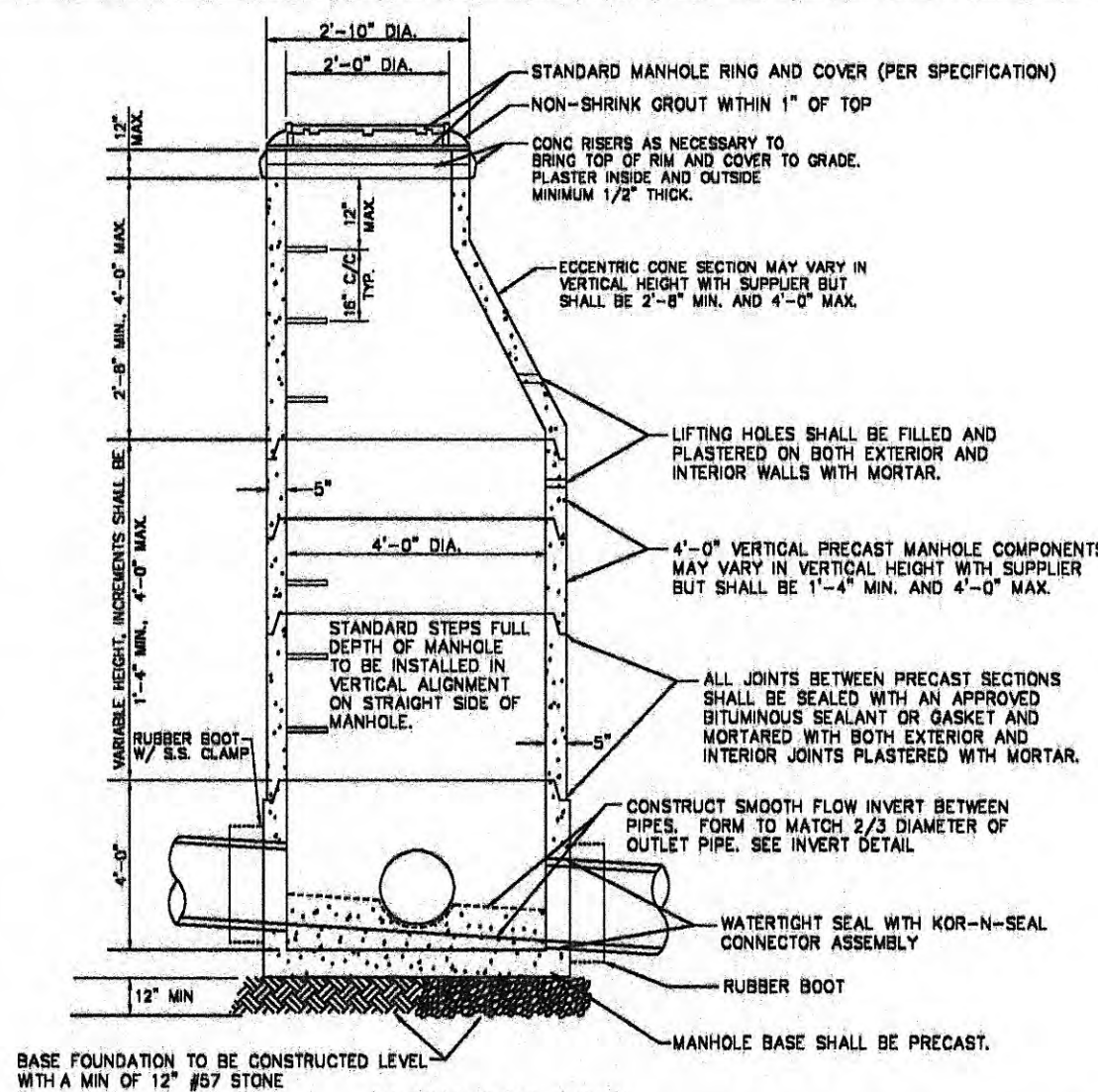
SANITARY
SEWER LINE
RELOCATION

PROFILES
SCALE: AS SHOWN

- NOTES:
- CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.
 - THE BACKFILL MATERIAL SHALL CONSIST OF 100% #57 STONE IN AREAS UNDER PAVEMENT AND IN ROADWAYS.

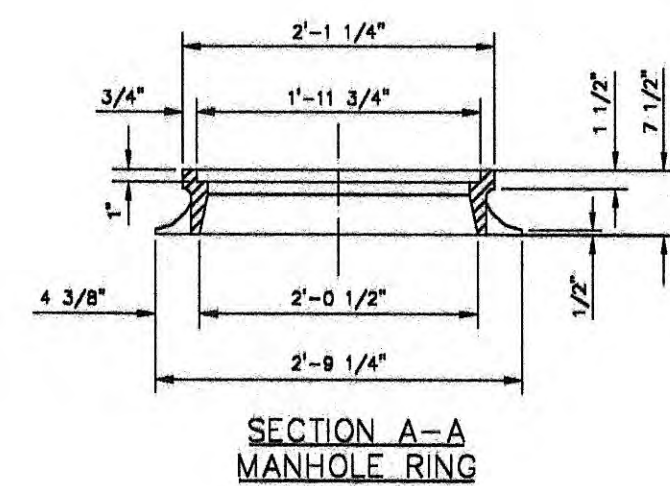
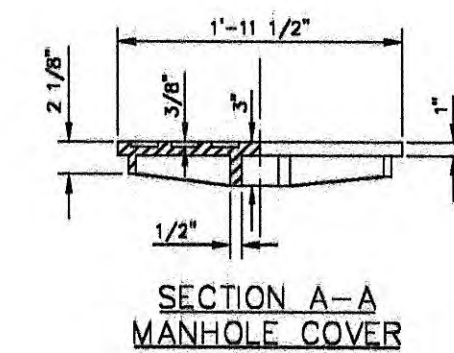
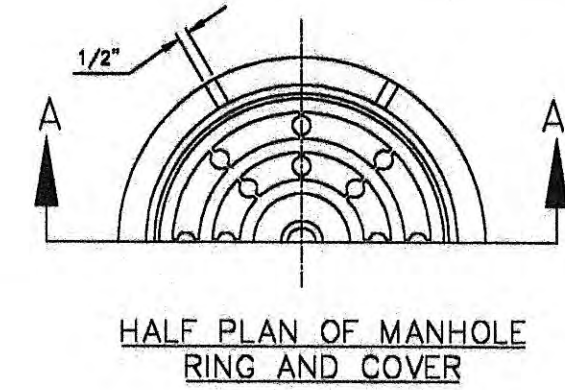


TYPICAL GRAVITY SEWER TRENCHING DETAILS
NOT TO SCALE



- PRECAST MANHOLE NOTES:
- ALL PRECAST MANHOLE COMPONENTS SHALL MEET REQUIREMENTS OF ASTM C-478, LATEST REVISION.
 - ALL MANHOLES SHALL BE CONSTRUCTED PLUMB.
 - ALL MANHOLE GRADES SHOWN ON THE PLANS ARE FOR THE INVERT OF THE MANHOLE CENTER.
 - IF MANHOLE IS SET IN LOCATION OF HIGH WATER TABLE OR UNDERGROUND WATER IS ENCOUNTERED, THE CONTRACTOR SHALL INSTALL UNDERDRAINS AND STONE AS DIRECTED IN THE FIELD BY THE INSPECTOR.
 - STEPS SHALL BE INSTALLED ON STRAIGHT SIDE OF MANHOLE.

PRECAST CONCRETE MANHOLE
NOT TO SCALE



MANHOLE RING AND COVER
NOT TO SCALE

NOTE: TRAFFIC BEARING RING AND COVER.
MINIMUM WEIGHT 385 POUNDS

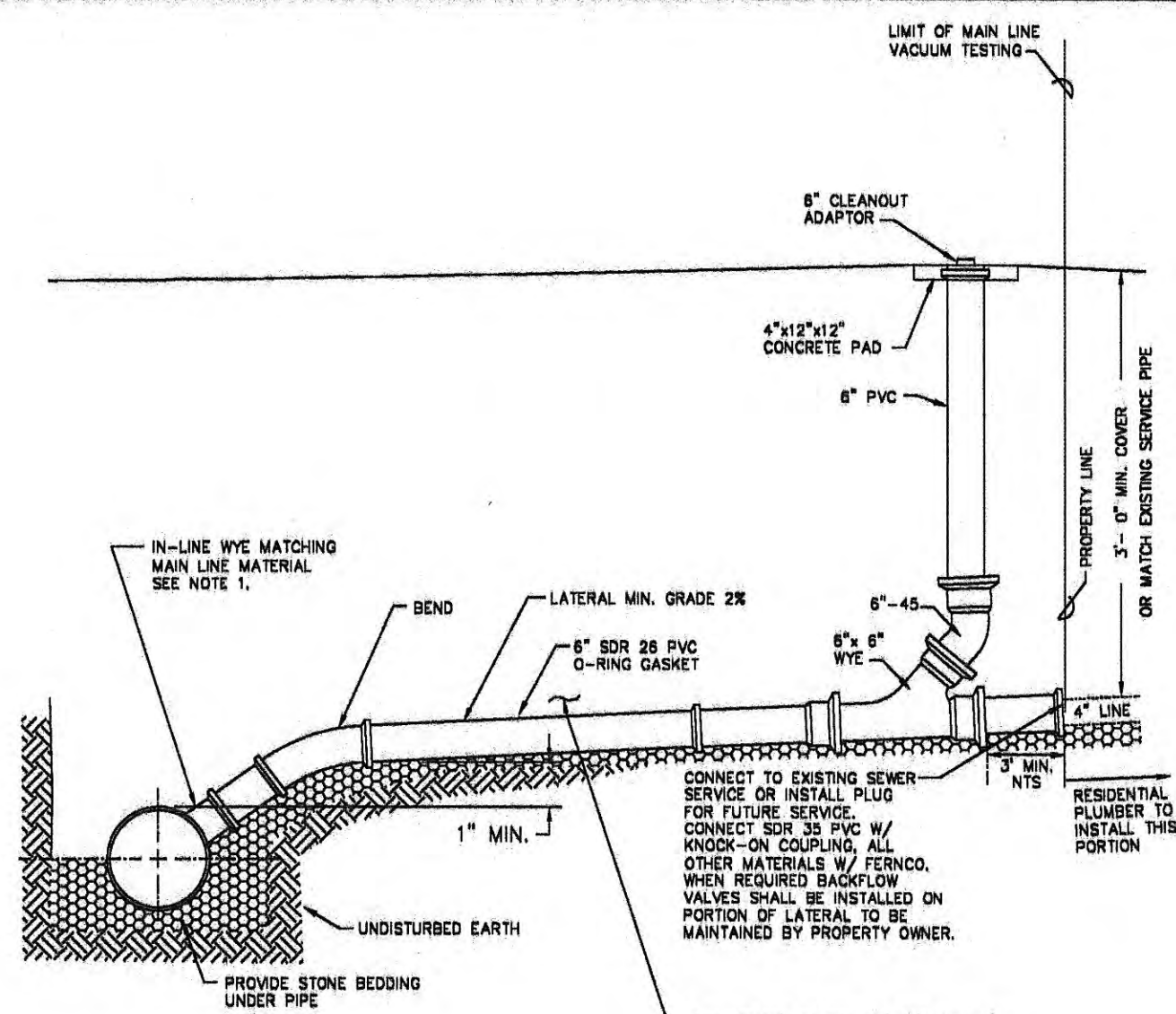
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U3-9
		73035-3209-14	

ROANE CO.

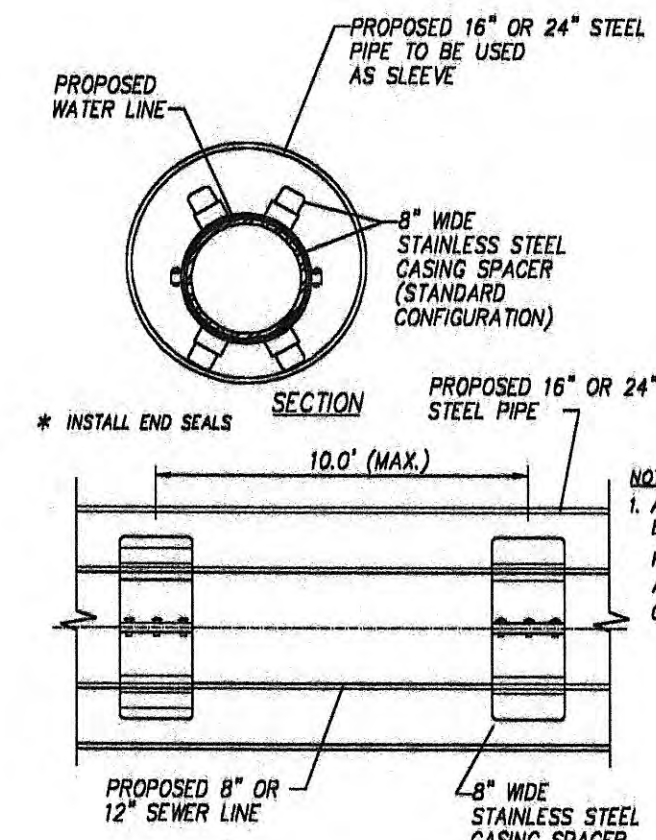
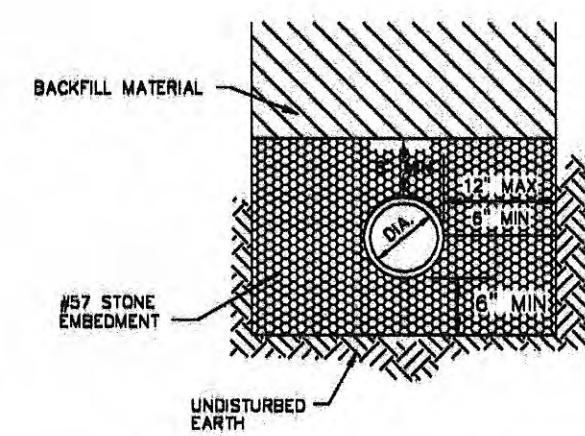
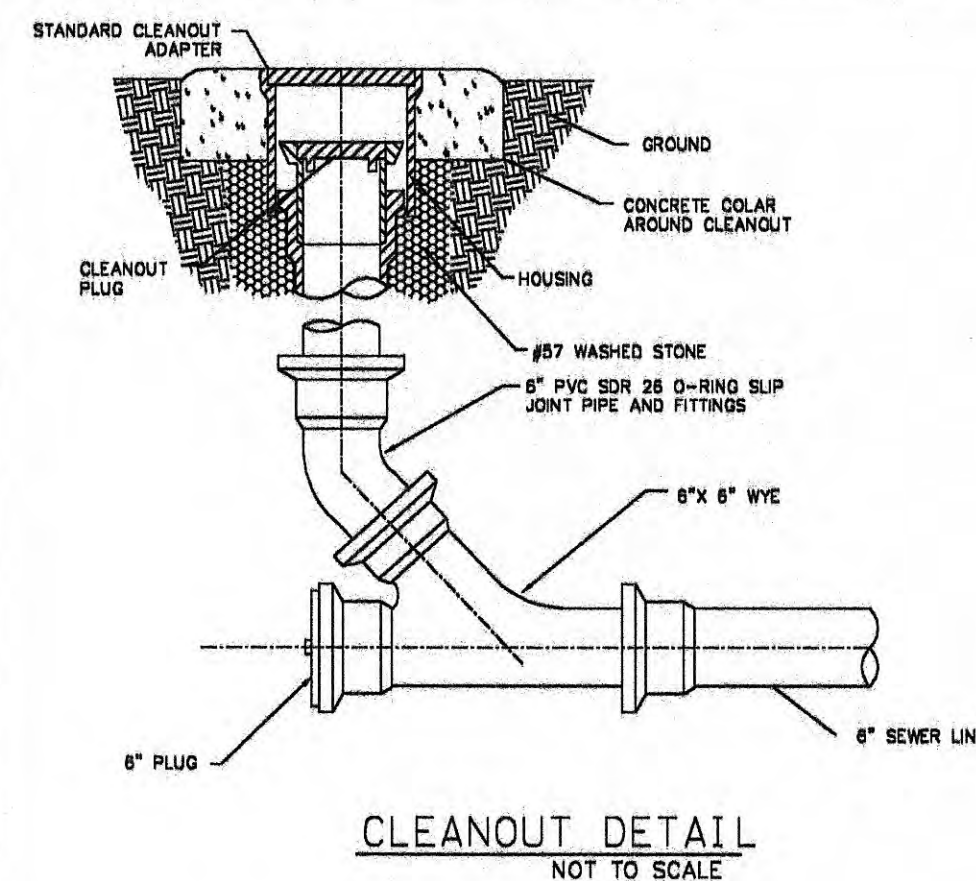
REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.

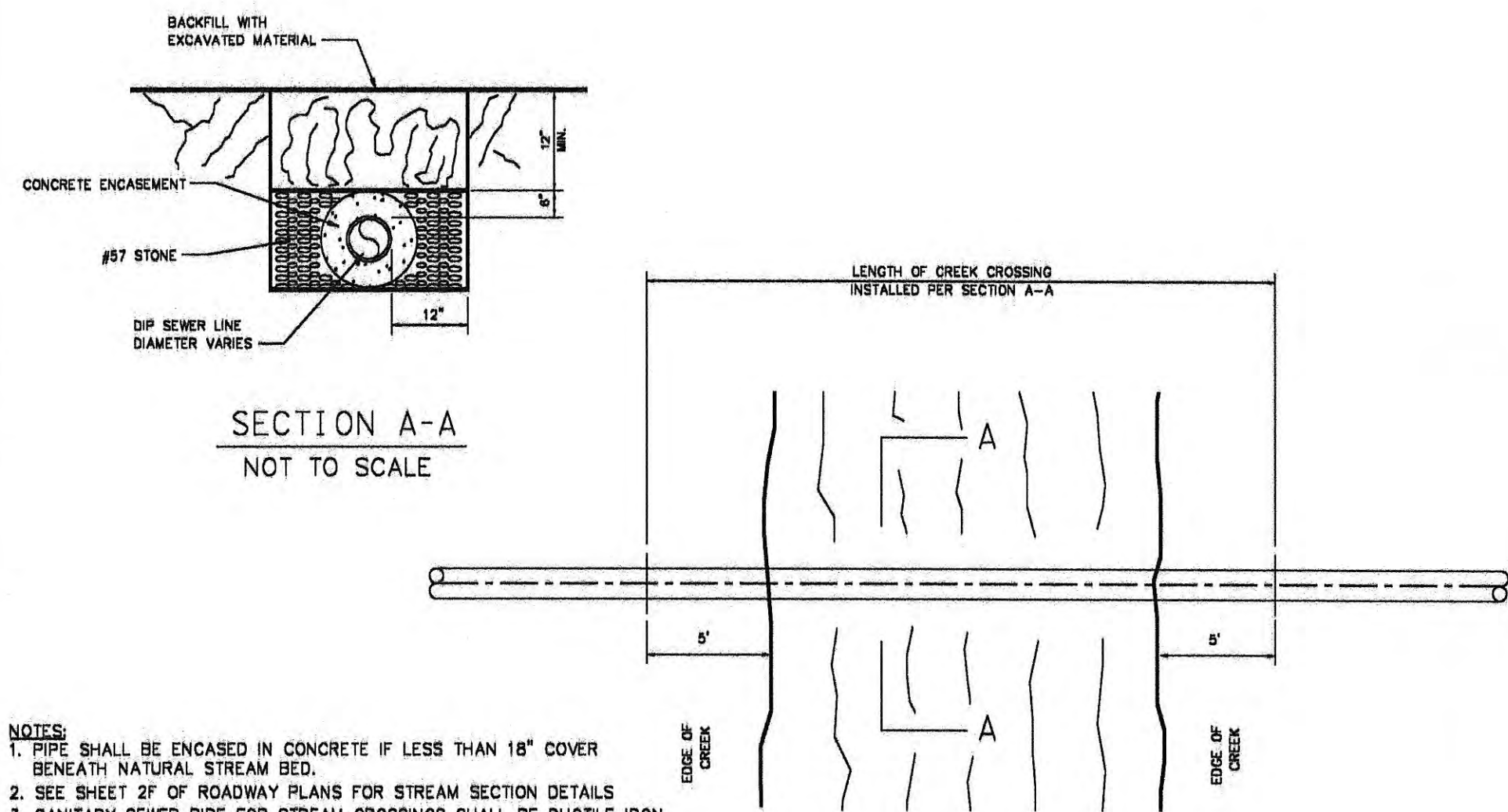


SANITARY SEWER SERVICE
NOT TO SCALE



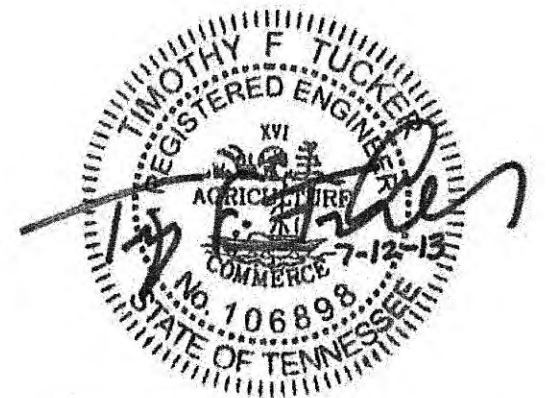
NOTES:

- ACCEPTABLE MANUFACTURERS OF BOTH SPACERS AND END SEALS FOR CASING PIPE AS FOLLOWS:
PIPELINE SEAL AND INSULATORS, INC. (PSI), HOUSTON, TX
ADVANCE PRODUCTS AND SYSTEMS, INC. (APSI), LAFAYETTE, LA
CASCADE WATERWORKS MFG. CO., YORKVILLE, IL



- NOTES:
- PIPE SHALL BE ENCASED IN CONCRETE IF LESS THAN 18" COVER BENEATH NATURAL STREAM BED.
 - SEE SHEET 2F OF ROADWAY PLANS FOR STREAM SECTION DETAILS.
 - SANITARY SEWER PIPE FOR STREAM CROSSINGS SHALL BE DUCTILE IRON.

SANITARY SEWER TYPICAL STREAM CROSSING
NOT TO SCALE



HARRIMAN
UTILITY
BOARD

SANITARY
SEWER LINE
RELOCATION

TYPICAL DETAILS
SCALE: AS SHOWN

TENNESSEE D.O.T.

DESIGN DIVISION

FILE NO.

INDEX OF DRAWINGS

SHT. NUMBER	SHT. NAME
U4-1	ESTIMATED QUANTITIES (GAS)
U4-2	UTILITY RELOCATION PLAN (GAS)
U4-3	UTILITY RELOCATION PLAN (GAS)
U4-4	UTILITY RELOCATION PLAN (GAS)
U4-5	UTILITY RELOCATION PLAN (GAS)
U4-6	UTILITY RELOCATION PLAN (GAS)
U4-7	TYPICAL GAS DETAILS

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	PERCENT UTILITY	PERCENT PROJECT
791-02.02	2IN MDPE GAS MAIN	L.F.	1,624	0%	100%
791-02.03	3IN MDPE GAS MAIN	L.F.	530	77%	23%
791-02.05	6IN MDPE GAS MAIN	L.F.	5,648	26%	74%
791-03.05	6IN HDPE GAS MAIN	L.F.	985	0%	100%
791-04.05	HDD 6IN PE PIPE-UNCONSOLIDATED	L.F.	50	0%	100%
791-06.02	CONNECT TO 2IN EX. PE MAIN	EACH	5	0%	100%
791-06.04	CONNECT TO 6IN EX. PE MAIN	EACH	2	0%	100%
791-06.09	CONNECT TO 3IN EX. PE MAIN	EACH	1	0%	100%
791-06.10	CONNECT TO 2IN EX. STL MAIN	EACH	8	0%	100%
791-06.21	CONNECT TO 3IN EX. CI/DI MAIN	EACH	3	0%	100%
791-07.01	2IN PE GAS VALVE ASSEMBLY	EACH	13	0%	100%
791-07.03	6IN PE GAS VALVE ASSEMBLY	EACH	18	26%	74%
791-07.08	3IN PE GAS VALVE ASSEMBLY	EACH	3	67%	33%
791-8.02	3/4IN SERVICE ASSEMBLY	EACH	11	0%	100%
791-8.03	1IN SERVICE ASSEMBLY	EACH	9	0%	100%
791-8.05	2IN SERVICE ASSEMBLY	EACH	1	0%	100%
791-8.07	3/4IN PE SERVICE PIPE	L.F.	335	0%	100%
791-8.08	1IN PE SERVICE PIPE	L.F.	1,190	0%	100%
791-8.10	2IN PE SERVICE PIPE	L.F.	235	0%	100%
791-10.10	RETIRE GAS MAINS	LS	1	0%	100%

FOOTNOTES:

- ① INCLUDES ALL MATERIALS INCLUDING SAND/STONE BEDDING, FLOWABLE FILL, TEMPORARY PAVEMENT IN OR OUT OF ROW, LABOR, EQUIPMENT FOR COMPLETE INSTALLATION OF PIPE INCLUDING BUT NOT LIMITED TO TRAFFIC CONTROL, EXCAVATION INCLUDING DIRT/ROCK, BACKFILLING, CREEK CROSSINGS PER SWPPP, COUPLINGS, FITTINGS, PIPE FUSION, APPURTENANCES, MAINTAINING THE TRENCH, PURGE POINT INSTALLATION, TESTING BY UTILITY SPECIFICATIONS TO INCLUDE BUT NOT LIMITED TO AIR, NITROGEN, HYDROSTATIC OR X-RAY, DEW POINT OR DRYING, AND ANY OTHER LABOR OR MATERIAL REQUIRED TO COMPLETE THE WORK AS SPECIFIED ON THE PLANS.
- ② INCLUDES ALL MATERIALS, LABOR, EQUIPMENT, AND TRAFFIC CONTROL, INCLUDING BUT NOT LIMITED TO FLUID CONTAINMENT FOR COMPLETE HORIZONTAL DIRECTIONAL DRILLING INSTALLATION OF CASING PIPE OR UNCASSED CARRIER PIPE IN BOTH UNCONSOLIDATED SOIL OR ROCK. STEEL PIPE INCLUDES SPECIAL COATING AS SPECIFIED ON PLANS AND SPECS. IF CASING PIPE HAS CARRIER PIPE, THE CARRIER PIPE SHALL BE PAID AT THE OPEN CUT ITEM PRICE.
- ③ INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT, NECESSARY FOR CONNECTING TO EXISTING GAS LINE INCLUDING TRAFFIC CONTROL.
- ④ INCLUDES TRANSITION FITTINGS, VALVES, VALVE BOX, BOX ADJUSTMENT, VALVE BOX COLLAR, VALVE MARKER, EXCAVATION, BEDDING, BACKFILL, COUPLINGS, FUSION TEES, TAP OF EXISTING LINE, AND ALL OTHER NECESSARY MATERIALS AND LABOR FOR COMPLETE INSTALLATION OF ASSEMBLY INCLUDING TRAFFIC CONTROL.
- ⑤ INCLUDES ALL MATERIALS, PARTS, LABOR, EQUIPMENT, MACHINERY, TOOLS, OR APPARATUS NECESSARY FOR INSTALLATION OF GAS SERVICE ASSEMBLIES AS DESCRIBED IN THE PLANS AND SPECS. INSTALLATION FOR LONG SIDE AND SHORT SIDE APPLICATIONS. SERVICE PIPE SHALL BE PAID PER LINEAR FOOT INSTALLED.
- ⑥ INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO RETIRE THE SYSTEM INDICATED ON THE DRAWINGS INCLUDING BUT NOT LIMITED TO DISCONNECTING THE PIPING FROM THE GAS SUPPLY SOURCE, PURGING ALL GAS FROM THE EXISTING PIPING AND PERMANENTLY SEALING THE ENDS OF THE SYSTEM.

UTILITY INFORMATION

UTILITY TITLE HARRIMAN UTILITY BOARD
ADDRESS P.O. BOX 434
HARRIMAN, TN. 37748

CONTACT PERSON FRANKIE DAVIS
PHONE (865) 882-3242

GENERAL NOTES:

1. CONSTRUCTION MATERIALS AND INSTALLATION MUST MEET HUB SPECIFICATIONS. MATERIAL SUBMITTALS MUST BE APPROVED BY HUB PRIOR TO CONSTRUCTION.
2. PRESENT WELDERS QUALIFICATION STATEMENTS & CERTIFICATES TO HUB PRIOR TO START OF CONSTRUCTION FOR EVERY WELDER THAT MAY WORK ON THIS PROJECT.
3. THE CONTRACTOR SHALL STAKE THE PROPOSED GAS MAIN LAYOUTS TO ALLOW AMPLE TIME FOR HUB'S INSPECTORS TO INSPECT THE LAYOUTS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT HUB FOR INSPECTION AT LEAST FIVE (5) DAYS PRIOR TO START OF CONSTRUCTION.
4. CONTRACTOR TO COORDINATE CONNECTIONS INTO EXISTING GAS MAINS WITH HUB'S CONNECTION CREWS PRIOR TO MAKING TAPS. HUB APPROVAL REQUIRED PRIOR TO TAPS.
5. CONTRACTOR TO STAKE CENTERLINE OF PROPOSED ROAD PRIOR TO GAS LINE INSTALLATION.
6. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR POT HOLING EXISTING UTILITIES AND DETERMINING ELEVATION AND LOCATION. POT HOLING SHALL BE CONDUCTED WITH THE LEAST INTRUSIVE MEANS SUCH AS A VACTRON, HAND DIGGING, OR OTHER SIMILAR EQUIPMENT. PAVEMENT RESTORATION AT POTHOLE LOCATIONS SHALL BE INCLUDED IN THE BASE BID.
7. THE CONTRACTOR SHALL PHOTOGRAPH OR VIDEO EACH SITE WITHIN 24 HOURS OF BEGINNING WORK ON THE ASSOCIATED PROPERTY. THE CONTRACTOR SHALL PROVIDE ONE COPY OF SUCH PHOTOS OR VIDEO TO THE OWNER WITH-IN 48 HOURS OF BEGINNING WORK ON SAID PROPERTY. IN THE EVENT THE RESIDENT PROJECT REPRESENTATIVE (RPR) IS NOT PRESENT FOR THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR TAKING A PHOTOGRAPH OF THE EXCAVATED SERVICE BEFORE THE CONDEMNATION AND AFTER THE CONDEMNATION. FAILURE TO DOCUMENT THE WORK BY MEANS OF PHOTOGRAPHY WILL RESULT IN THE CONTRACTOR VERIFYING THE WORK BY MEANS OF RE-EXCAVATING THE SITE, AT THE EXPENSE OF THE CONTRACTOR.
8. THE CONTRACTOR MUST MEET ALL NECESSARY REQUIREMENTS OF CFR 49 PART 192, SUBPARTS E AND N RELATED TO NATURAL GAS WORK INCLUDING BUT NOT LIMITED TO DRUG AND ALCOHOL TESTING, OPERATOR QUALIFICATION, FUSION QUALIFICATION, WELDER CERTIFICATION, ETC. AS A PREREQUISITE REQUIREMENT TO THE OWNER EXECUTING A CONTRACT, THE CONTRACTOR SHALL FURNISH A LIST OF CREW MEMBERS THAT WILL BE SPECIFICALLY ASSIGNED TO THE WORK AND EVIDENCE OF THEIR QUALIFICATIONS UNDER THE REQUIRED PROGRAMS. UNQUALIFIED CREW MEMBERS WILL BE QUALIFIED OR REPLACED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR MAY BE SUBJECT TO PENALTIES THAT COULD INCLUDE TERMINATION OF THE CONTRACT AS DETERMINED BY THE OWNER FOR HAVING CREW MEMBERS PERFORMING TASKS IN WHICH THEY ARE NOT QUALIFIED TO PERFORM.
9. IN ORDER FOR THE MOST CURRENT OPERATOR QUALIFICATION STATUS CHECKS OF CONTRACTOR OR CONTRACTOR EMPLOYEES TO BE PERFORMED, THE CONTRACTOR MUST COMPLY WITH 49 CFR PART 192, SUBPART N USING ONE OF THE THREE OPTIONS LISTED BELOW:
- 9.1. BE A SUBSCRIBER OF THE OQ PLAN PROVIDER THAT HUB CURRENTLY HAS A SUBSCRIPTION OR CONTRACT WITH,
- 9.2. USE HIS OR HER OWN OPERATOR QUALIFICATION PLAN THAT HAS BEEN APPROVED BY HUB OR
- 9.3. USE A THIRD-PARTY OPERATOR QUALIFICATION PLAN THAT HAS BEEN APPROVED BY HUB.
10. THE CONTRACTOR SHALL HAVE ALL DOCUMENTATION DEMONSTRATING THAT PERSONNEL PERFORMING COVERED OQ TASKS ARE QUALIFIED TO PERFORM SUCH TASKS AS WELL AS MEET THE DOT OQ STANDARDS AND HAVE THAT DOCUMENTATION ELECTRONICALLY ACCESSIBLE BY THE OWNER WITHIN 10 BUSINESS DAYS AFTER RECEIVING THE NOTICE OF AWARD. THE OWNER MAY CONSIDER THE CONTRACTOR IN DEFAULT IF THIS DOCUMENTATION IS NOT RECEIVED OR ELECTRONICALLY AVAILABLE WITHIN 10 BUSINESS DAYS AFTER THE CONTRACTOR RECEIVES THE NOTICE OF AWARD.
11. CONTRACTOR WILL BE REQUIRED TO HAVE THE FOLLOWING SAFETY EQUIPMENT ON-SITE AS THE WORK IS PERFORMED.
- 11.1. FIRE EXTINGUISHER - CONTRACTORS WILL NEED TO POSSESS A 20 CUBIC FOOT OR GREATER EXTINGUISHER RATED AS ABC.
- 11.2. A FIRE HOOD(S) FOR ALL PERSONNEL WORKING IN LIVE GAS WILL NEED TO PROVIDE COVERAGE FOR HEAD, FACE AND NECK AND BE CLASSIFIED AS FIRE RESISTANT.
- 11.3. A FIRE SUIT(S) FOR ALL PERSONNEL WORKING DIRECTLY IN LIVE GAS WILL NEED TO BE - INSULATED FLAME RESISTANT ONE PIECE COVERALL.
12. EACH CONTRACTOR EMPLOYEE, PERFORMING OR PARTICIPATING IN THE PERFORMANCE OF A COVERED TASK, SHALL ADHERE TO THE FOLLOWING GUIDELINES FOR FIRE RETARDANT CLOTHING WHEN WORKING IN CONDITIONS AS STATED BELOW:
- 12.1. INITIAL EXCAVATION ACTIVITIES - 100% COTTON UNDERWEAR, COTTON SOCKS, COTTON SHIRT, COTTON PANTS, LEATHER WORK BOOTS + APPROPRIATE PPE FOR TASK.
- 12.2. HAND EXCAVATION OF SERVICE TEE - 100% COTTON UNDERWEAR, COTTON SOCKS, COTTON SHIRT, COTTON PANTS, LEATHER WORK BOOTS + APPROPRIATE PPE FOR TASK.
- 12.3. SQUEEZE OFF OF PIPELINE - 100% COTTON CLOTHING PLUS HOODED FLAME RESISTANT 1 PIECE COVERALL, FLAME RESISTANT HEAD SOCK, + APPROPRIATE PPE FOR TASK.
- 12.4. BLOWING GAS ENVIRONMENT - 100% COTTON CLOTHING PLUS HOODED INSULATED FLAME RESISTANT ONCE PIECE COVERALL, FLAME RESISTANT HEAD SOCK AND LEATHER GLOVES.
13. ALL INCIDENTAL WORK, INCLUDING LABOR AND MATERIALS, NECESSARY TO COMPLETE THE PROJECT AS SHOWN IN THE CONTRACT DOCUMENTS, FOR WHICH A SEPERATE PAY ITEM IS NOT SHOWN SHALL BE PERFORMED BY THE CONTRACTOR AND NO ADDITIONAL PAYMENT SHALL BE MADE. THE COST OF THIS WORK SHALL BE MERGED INTO THE UNIT PRICES BID FOR THE BID ITEMS SHOWN.

LEGEND	
—	PROPOSED CENTERLINE
—	PROP/EXIST. R.O.W.
— G —	PROPOSED GAS LINE
— S —	PROPOSED STORM SEWER
— P —	EXIST. PROPERTY LINE
— 8" SA —	EXIST. SANITARY SEWER
— 8" W —	EXIST. WATER LINE
— P/T —	EXIST. POWER LINE
— 3" G —	EXIST. NATURAL GAS
—	EXIST. STORM SEWER
—	EXIST. STREAM
W.M.	EXIST. WATER METER
G.M.	EXIST. GAS METER
MB	EXIST. MAILBOX

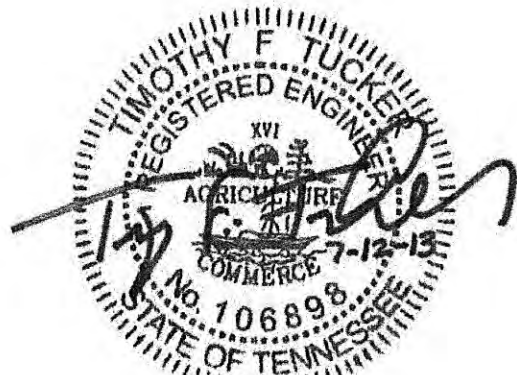
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(5B)	U4-1
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.



HARRIMAN
UTILITY
BOARD

GAS LINE
RELOCATION

ESTIMATED QUANTITIES



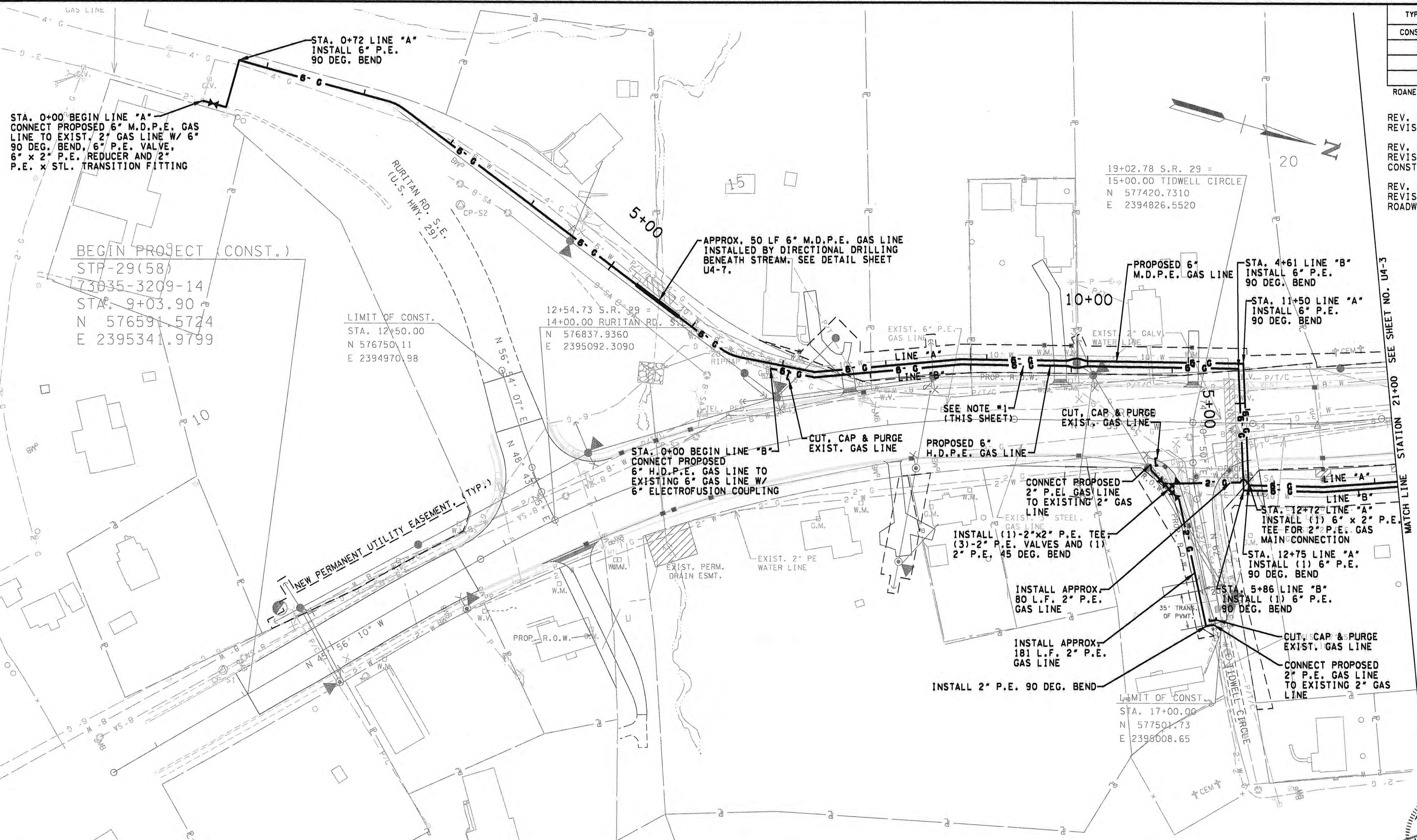
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U4-2
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
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ROADWAY REVISION.



STA. 0+00 BEGIN LINE "A"
CONNECT PROPOSED 6" M.D.P.E. GAS
LINE TO EXIST. 2" GAS LINE W/ 6"
90 DEG. BEND, 6" P.E. VALVE,
6" x 2" P.E. REDUCER AND 2"
P.E. x STL. TRANSITION FITTING

BEGIN PROJECT (CONST.)
STP-29(58)
73035-3209-14
STA. 9+03.90
N 576591.5724
E 2395341.9799

LIMIT OF CONST.
STA. 12+50.00
N 576750.11
E 2394970.98

12+54.73 S.R. 29 =
14+00.00 RURITAN RD. S.E.
N 576837.9360
E 2395092.3090

19+02.78 S.R. 29 =
15+00.00 TIDWELL CIRCLE
N 577420.7310
E 2394826.5520

PROPOSED 6"
M.D.P.E. GAS LINE

STA. 4+61 LINE "B"
INSTALL 6" P.E.
90 DEG. BEND
STA. 11+50 LINE "A"
INSTALL 6" P.E.
90 DEG. BEND

APPROX. 50 LF 6" M.D.P.E. GAS LINE
INSTALLED BY DIRECTIONAL DRILLING
BENEATH STREAM. SEE DETAIL SHEET
U4-7.

SEE NOTE #1
(THIS SHEET)

CUT, CAP & PURGE
EXIST. GAS LINE

PROPOSED 6"
H.D.P.E. GAS LINE

CONNECT PROPOSED
2" P.E. GAS LINE
TO EXISTING 2" GAS
LINE

INSTALL (1) 2"x2" P.E. TEE,
(3) 2" P.E. VALVES AND (1)
2" P.E. 45 DEG. BEND

INSTALL APPROX.
80 L.F. 2" P.E.
GAS LINE

INSTALL APPROX.
181 L.F. 2" P.E.
GAS LINE

INSTALL 2" P.E. 90 DEG. BEND

LIMIT OF CONST.
STA. 17+00.00
N 577501.73
E 2398008.65

STA. 12+72 LINE "A"
INSTALL (1) 6" x 2" P.E.
TEE FOR 2" P.E. GAS
MAIN CONNECTION

STA. 12+75 LINE "A"
INSTALL (1) 6" P.E.
90 DEG. BEND

STA. 12+86 LINE "B"
INSTALL (1) 6" P.E.
90 DEG. BEND

CUT, CAP & PURGE
EXIST. GAS LINE

CONNECT PROPOSED
2" P.E. GAS LINE
TO EXISTING 2" GAS
LINE

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP- S1	576561.6641	2395325.6611	862.1500	GPS 73-029-03
CP- S2	576663.4159	2394818.5709	845.0000	GPS 73-029-04
CP- S3	576927.8931	2394999.9085	852.3500	GPS 73-029-05
CP- S4	577462.5819	2394822.2858	857.0900	GPS 73-029-06
CP- S5	577802.7604	2394685.3779	857.9600	GPS 73-029-07
CP- S6	578259.2949	2394478.2930	839.7300	GPS 73-029-08
CP- S7	578865.0073	2394344.9819	849.1900	GPS 73-029-09
CP- S8	579425.3815	2394241.1029	864.2000	GPS 73-029-10
CP- S9	580060.2802	2394271.7045	877.3200	GPS 73-029-11
CP- S10	580653.5569	2394170.8954	881.3500	GPS 73-029-12

- NOTE:
1. MAXIMUM COVER FOR GAS LINE IS 36" DEPTH AND MINIMUM COVER IS 28" DEPTH.
 2. CONTRACTOR MUST MEET ALL NECESSARY REQUIREMENTS OF CFR 49 PART 192, SUBPART E AND N RELATED TO NATURAL GAS WORK, AND MUST MEET OR EXCEED HUB'S OPERATOR QUALIFICATION (OQ) PROGRAM. (SEE SPECIFICATION 33 51 13.10) TO PERFORM THE GAS LINE WORK IN THIS CONTRACT.
 3. LINE "A" IS PROPOSED M.D.P.E. AND LINE "B" IS PROPOSED H.D.P.E.



HARRIMAN
UTILITY
BOARD

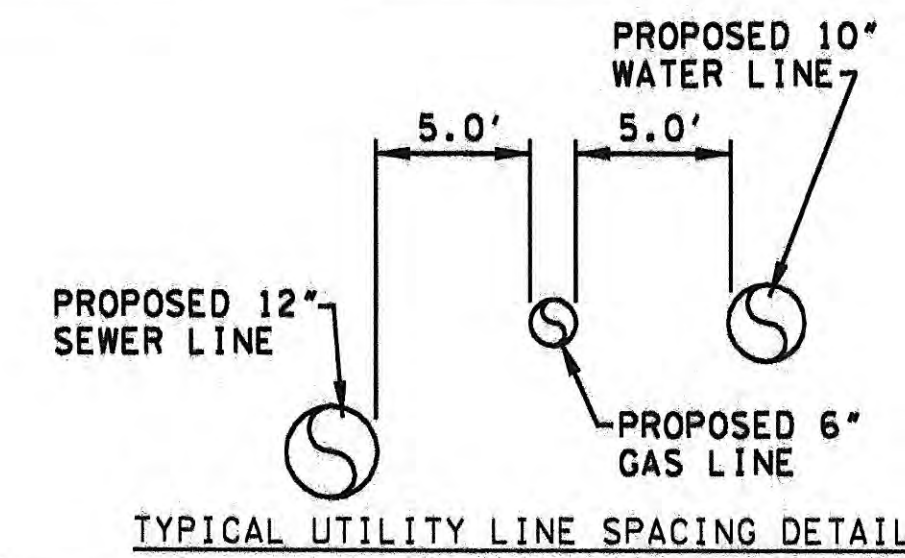
GAS LINE
RELOCATION

BEGIN PROJ. TO STA. 21+00.00
SCALE: 1"=50'

NOTE:

1. MAXIMUM COVER FOR GAS LINE IS 36" DEPTH AND MINIMUM COVER IS 28" DEPTH.
2. CONTRACTOR MUST MEET ALL NECESSARY REQUIREMENTS OF CFR 49 PART 192, SUBPART E AND N RELATED TO NATURAL GAS WORK, AND MUST MEET OR EXCEED HUB'S OPERATOR QUALIFICATION (OQ) PROGRAM. (SEE SPECIFICATION 33 51 13.10) TO PERFORM THE GAS LINE WORK IN THIS CONTRACT.
3. LINE "A" IS PROPOSED M.D.P.E. AND LINE "B" IS PROPOSED H.D.P.E.

ADDITIONAL CONSTRUCTION NOTES PER EASEMENT DOCUMENTS	
PROPERTY OWNER	NOTES
REBECCA A. BROWN (839 RURITAN ROAD)	CONTACT BECKY BROWN 2 WEEKS PRIOR TO WORKING ON PROPERTY. TRY TO WORK ON PROPERTY DURING TIMES THE BUSINESS IS CLOSED (JANUARY - FEBRUARY OR JULY - AUGUST). BE CAREFUL NOT TO DAMAGE FRENCH DRAIN NEAR NEW PROPERTY LINE. NO EQUIPMENT IS TO BE DRIVEN ON CONCRETE PARKING AREA OUTSIDE OF EASEMENT.
NEW WILLARD PARK CEMETARY (RURITAN ROAD)	CARE MUST BE TAKEN TO ENSURE THAT NO GRAVES WILL BE DISTURBED.
GEORGE D. & HELEN W. WHALEY (814 RURITAN ROAD)	MAINTAIN ACCESS TO DRIVEWAY (RENTAL PROPERTY)



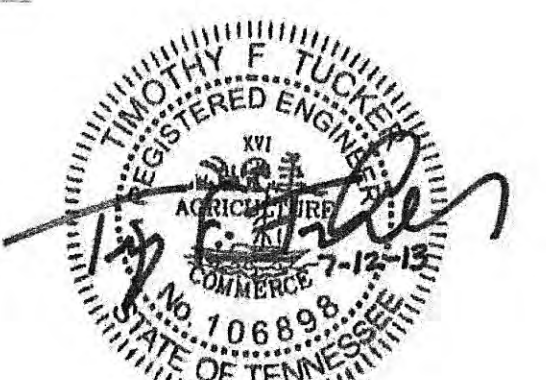
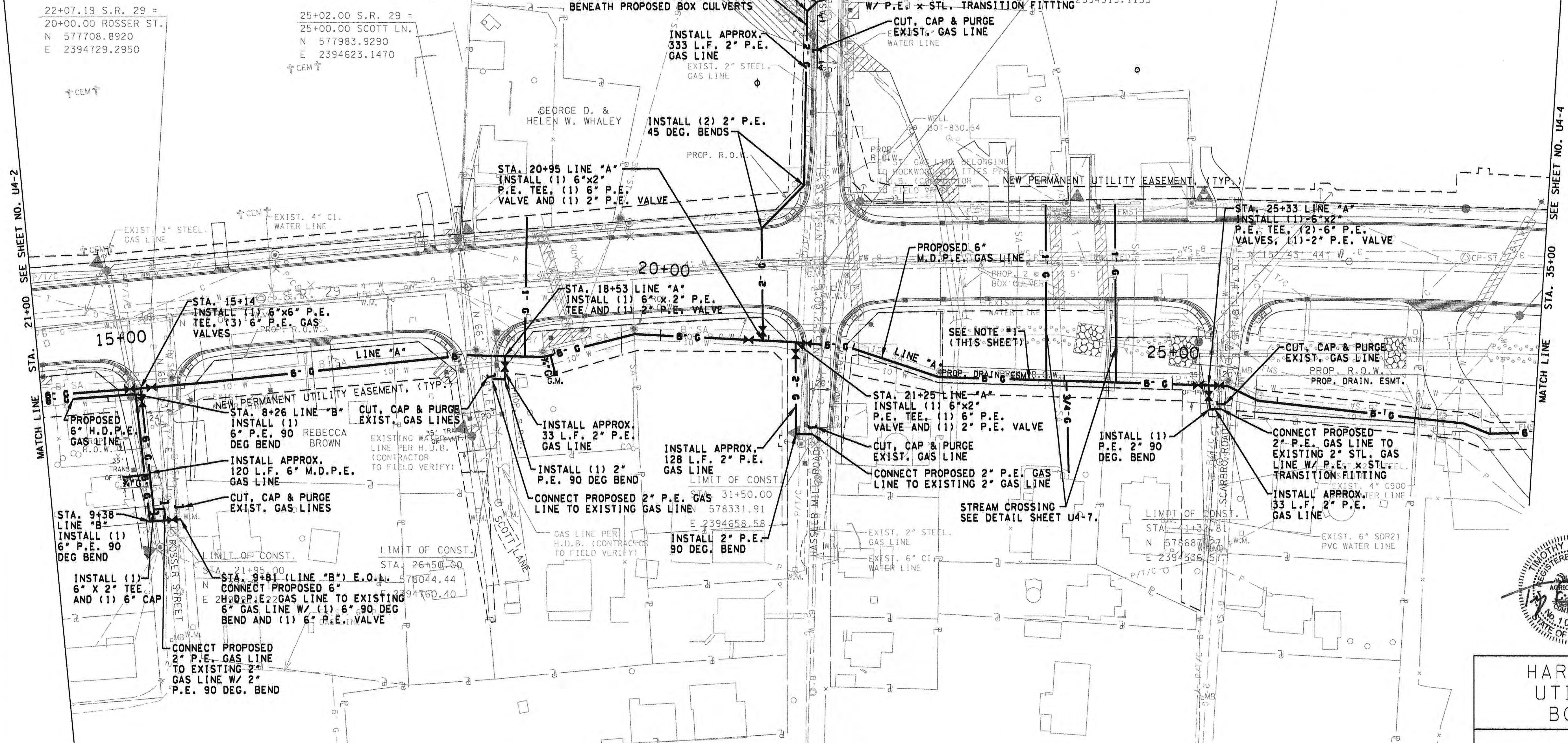
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-2915B)	U4-3
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.



HARRIMAN
UTILITY
BOARD

GAS LINE
RELOCATION

STA. 21+00.00 TO STA. 35+00.00
SCALE: 1"=50'

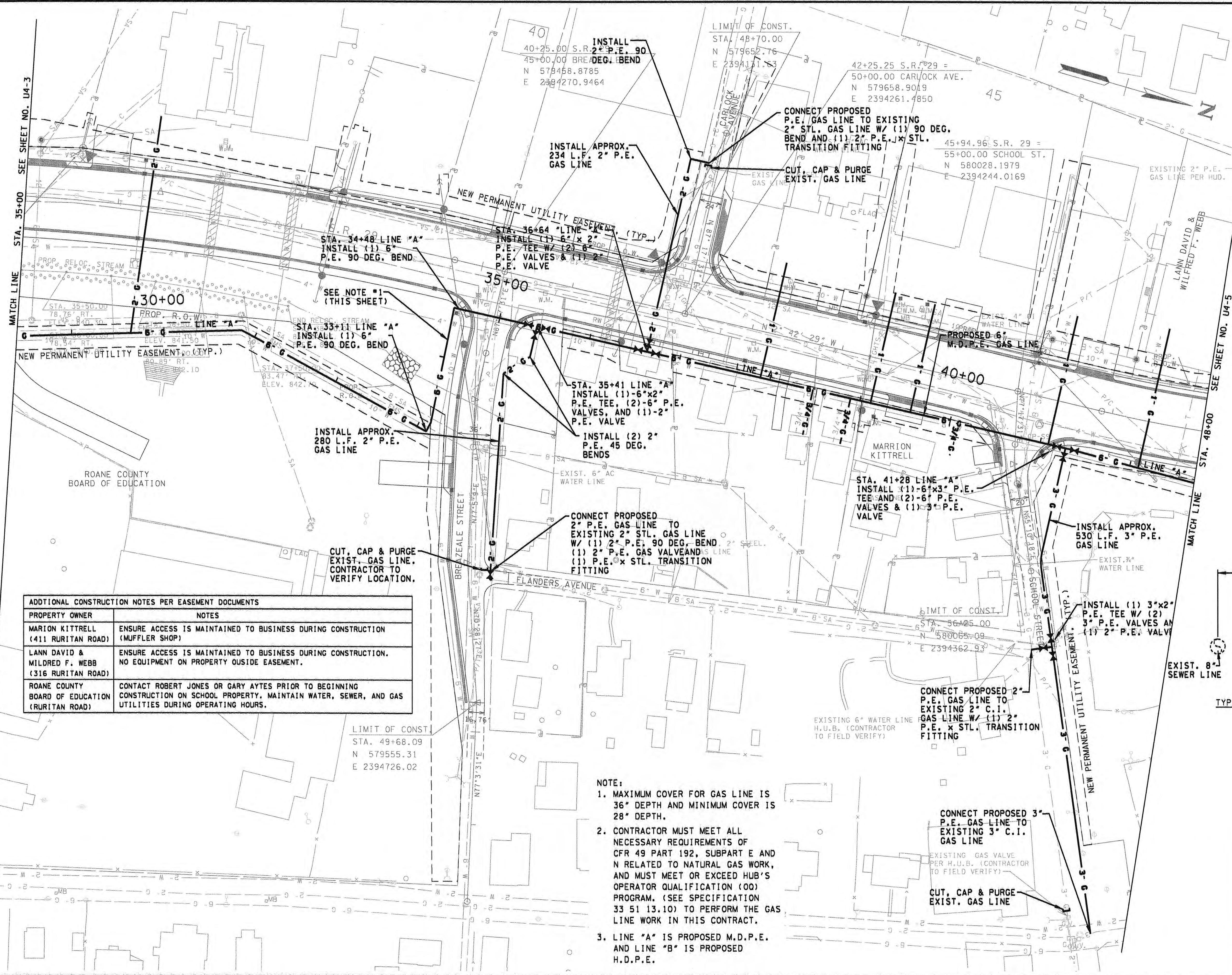
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CONST.	2013	STP-2915B	U4-4
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

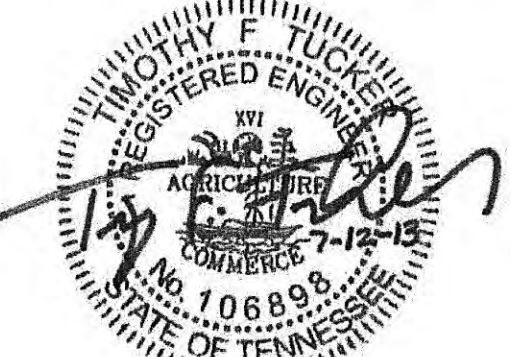
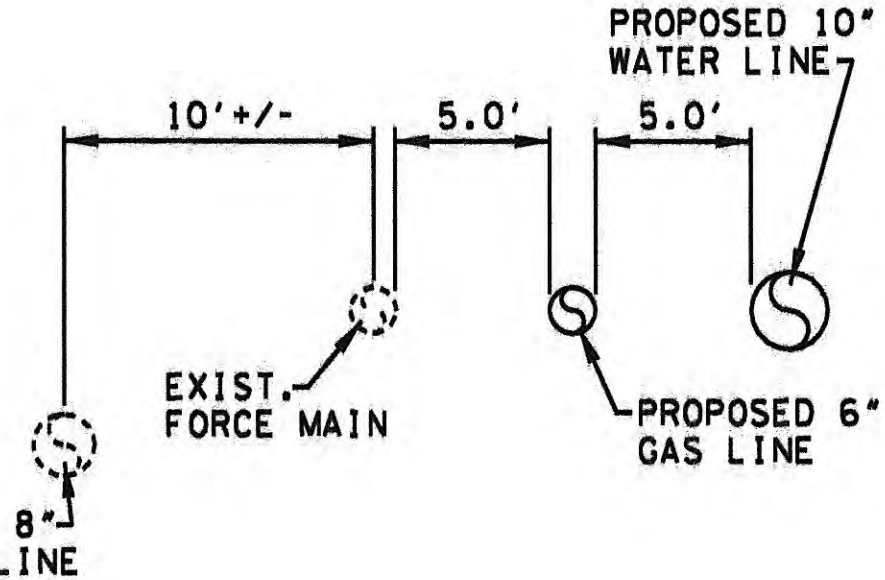
REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.



ADDITIONAL CONSTRUCTION NOTES PER EASEMENT DOCUMENTS	
PROPERTY OWNER	NOTES
MARION KITTRELL (411 RURITAN ROAD)	ENSURE ACCESS IS MAINTAINED TO BUSINESS DURING CONSTRUCTION (MUFFLER SHOP)
LANN DAVID & MILDRED F. WEBB (316 RURITAN ROAD)	ENSURE ACCESS IS MAINTAINED TO BUSINESS DURING CONSTRUCTION. NO EQUIPMENT ON PROPERTY OUTSIDE EASEMENT.
ROANE COUNTY BOARD OF EDUCATION (RURITAN ROAD)	CONTACT ROBERT JONES OR GARY AYLES PRIOR TO BEGINNING CONSTRUCTION ON SCHOOL PROPERTY. MAINTAIN WATER, SEWER, AND GAS UTILITIES DURING OPERATING HOURS.

- NOTE:
1. MAXIMUM COVER FOR GAS LINE IS 36" DEPTH AND MINIMUM COVER IS 28" DEPTH.
 2. CONTRACTOR MUST MEET ALL NECESSARY REQUIREMENTS OF CFR 49 PART 192, SUBPART E AND N RELATED TO NATURAL GAS WORK, AND MUST MEET OR EXCEED HUB'S OPERATOR QUALIFICATION (OO) PROGRAM. (SEE SPECIFICATION 33 51 13.10) TO PERFORM THE GAS LINE WORK IN THIS CONTRACT.
 3. LINE "A" IS PROPOSED M.D.P.E. AND LINE "B" IS PROPOSED H.D.P.E.

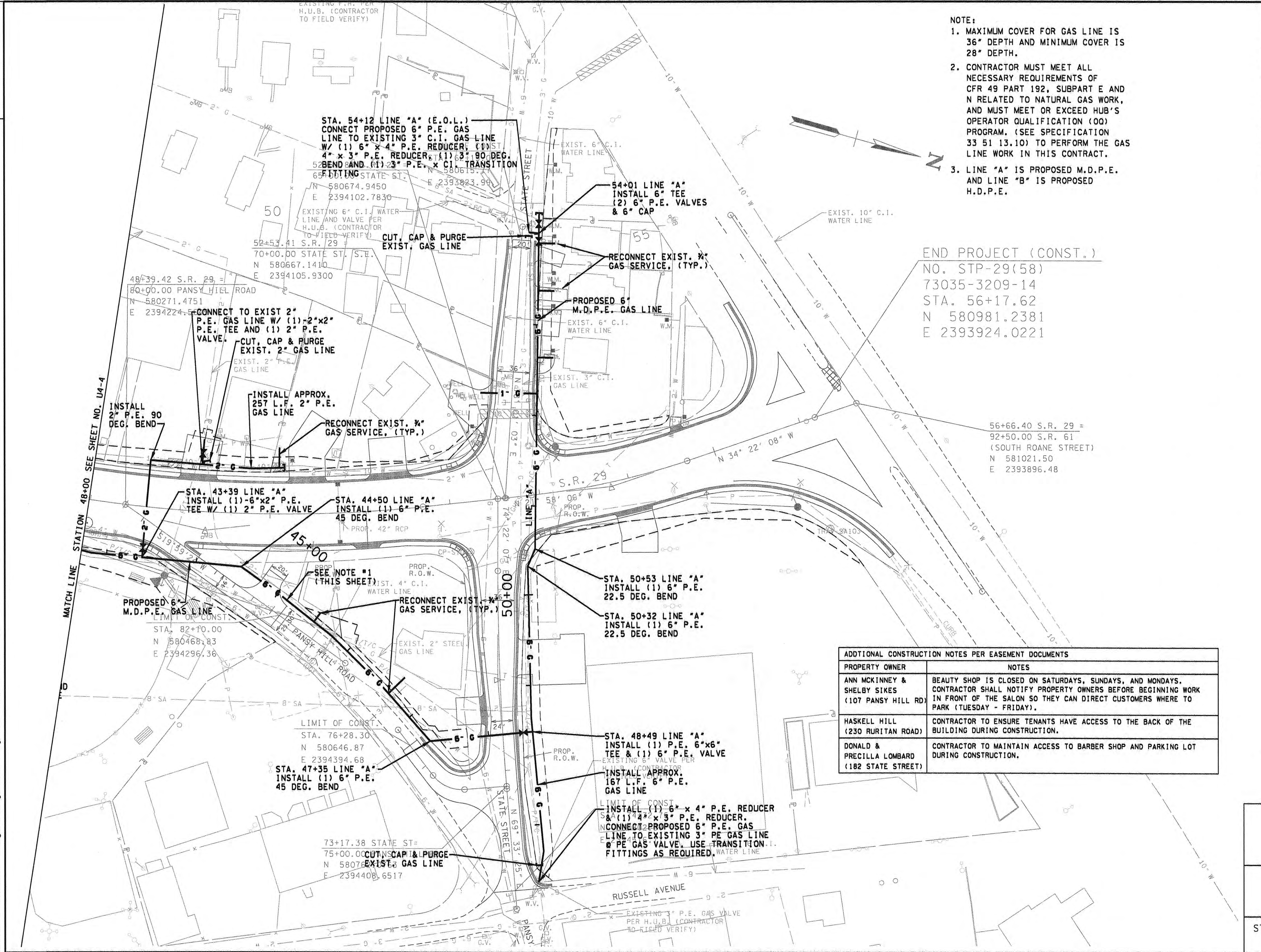


HARRIMAN
UTILITY
BOARD

GAS LINE
RELOCATION

STA. 35+00.00 TO STA. 48+00.00
SCALE: 1"=50'





- NOTE:
- MAXIMUM COVER FOR GAS LINE IS 36" DEPTH AND MINIMUM COVER IS 28" DEPTH.
 - CONTRACTOR MUST MEET ALL NECESSARY REQUIREMENTS OF CFR 49 PART 192, SUBPART E AND N RELATED TO NATURAL GAS WORK, AND MUST MEET OR EXCEED HUB'S OPERATOR QUALIFICATION (OO) PROGRAM. (SEE SPECIFICATION 33 51 13.10) TO PERFORM THE GAS LINE WORK IN THIS CONTRACT.
 - LINE "A" IS PROPOSED M.D.P.E. AND LINE "B" IS PROPOSED H.D.P.E.

END PROJECT (CONST.)
 NO. STP-29(58)
 73035-3209-14
 STA. 56+17.62
 N 580981.2381
 E 2393924.0221

ADDITIONAL CONSTRUCTION NOTES PER EASEMENT DOCUMENTS	
PROPERTY OWNER	NOTES
ANN MCKINNEY & SHELBY SIKES (107 PANSY HILL RD)	BEAUTY SHOP IS CLOSED ON SATURDAYS, SUNDAYS, AND MONDAYS. CONTRACTOR SHALL NOTIFY PROPERTY OWNERS BEFORE BEGINNING WORK IN FRONT OF THE SALON SO THEY CAN DIRECT CUSTOMERS WHERE TO PARK (TUESDAY - FRIDAY).
HASKELL HILL (230 RURITAN ROAD)	CONTRACTOR TO ENSURE TENANTS HAVE ACCESS TO THE BACK OF THE BUILDING DURING CONSTRUCTION.
DONALD & PRECILLA LOMBARD (182 STATE STREET)	CONTRACTOR TO MAINTAIN ACCESS TO BARBER SHOP AND PARKING LOT DURING CONSTRUCTION.

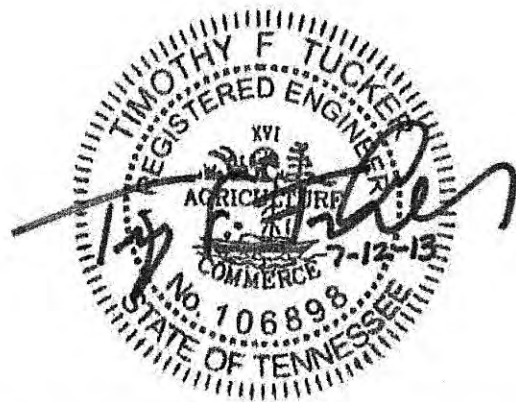
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U4-5
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
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REV. 09-21-12:
 REVISED PER T.D.O.T
 CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
 REVISED PER T.D.O.T
 ROADWAY REVISION.



HARRIMAN
UTILITY
BOARD

GAS LINE
RELOCATION

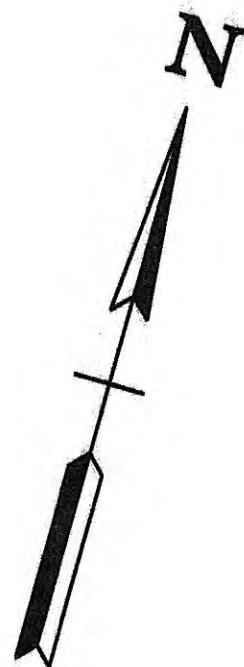
STA. 48+00.00 TO END OF PROJ.
SCALE: 1"=50'



TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U4-6
		73035-3209-14	

ROANE CO.

REV. 04-25-13;
REVISED PER T.D.O.T
ROADWAY REVISION.

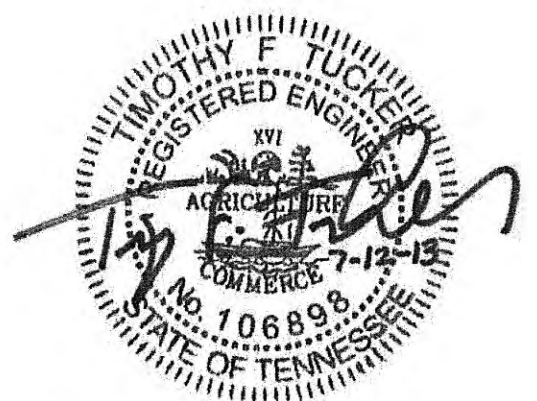
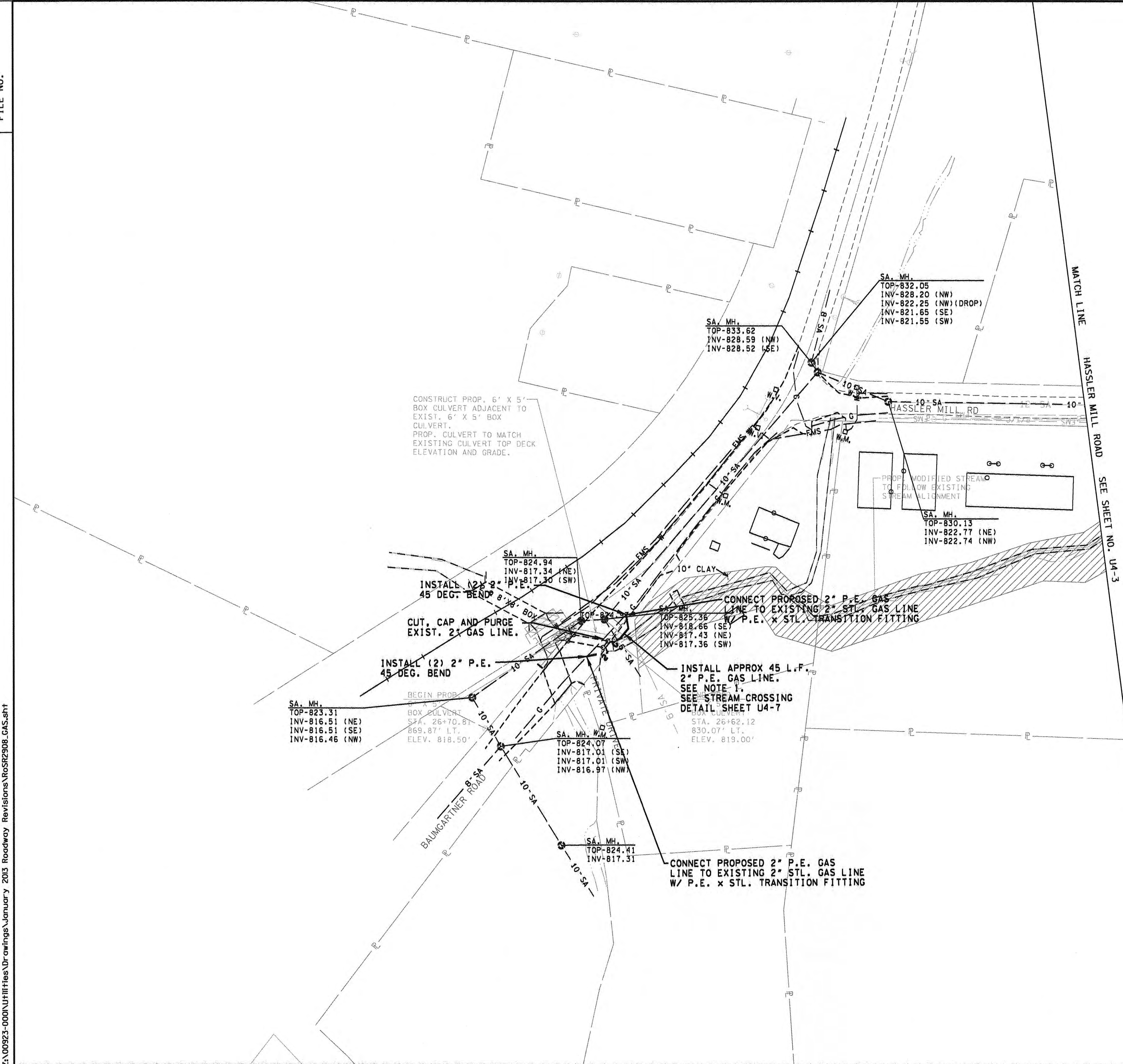


NOTE:

1. CONTRACTOR TO VERIFY GAS LINE DEPTH BENEATH PROPOSED CULVERT BY POTHOLING PRIOR TO RELOCATION. IF CROWN OF GAS LINE IS BELOW 817', NO WORK SHALL BE DONE ON GAS LINE.
2. CONTRACTOR MUST MEET ALL NECESSARY REQUIREMENTS OF CFR 49... (SEE NOTE 2 FROM PREVIOUS SHEETS).

NOTE:

NO CONSTRUCTION ACTIVITY OF ANY KIND IS TO BE ALLOWED ON TRACT #100 - TENNESSEE VALLEY AUTHORITY (TVA)

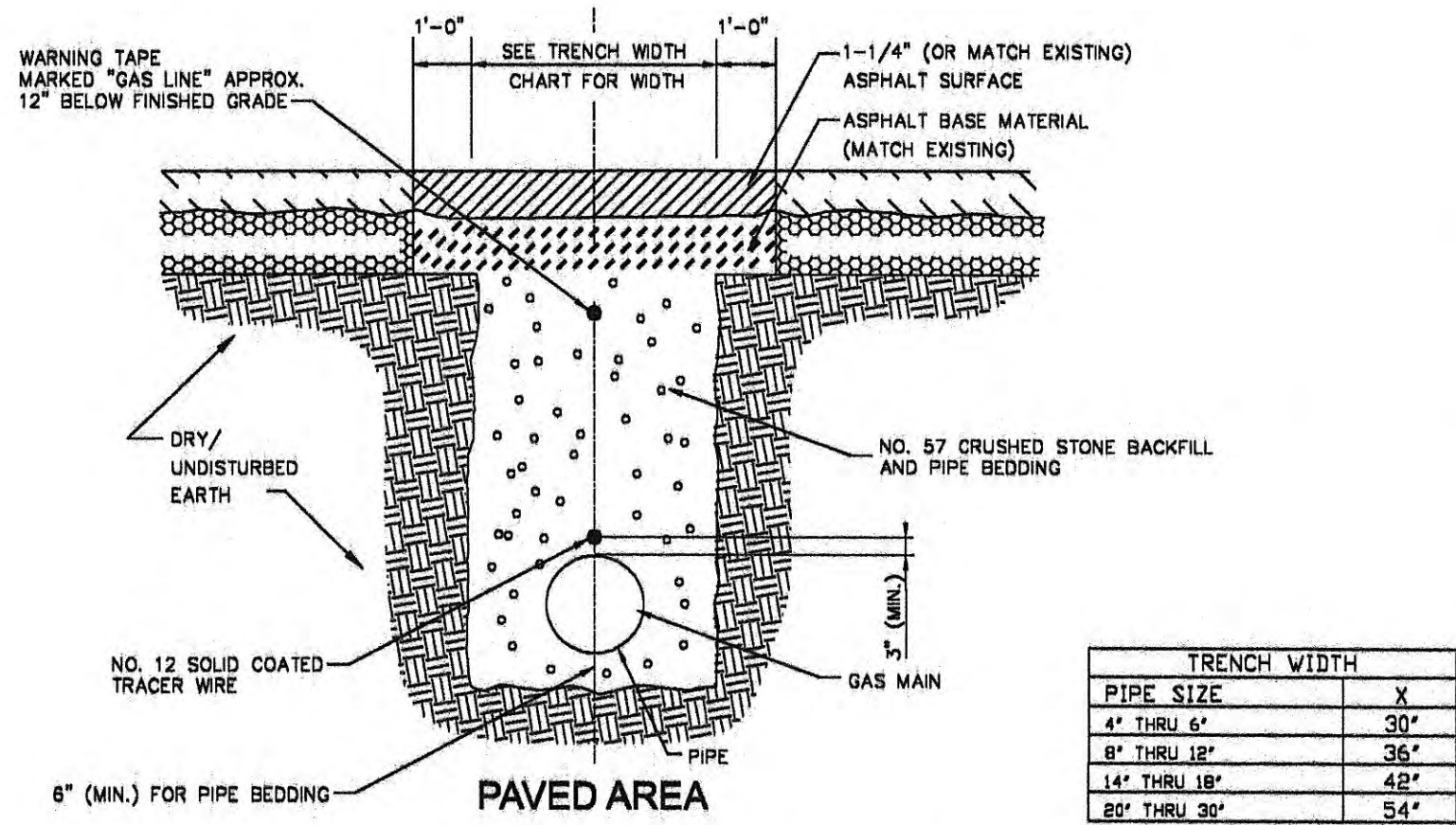


HARRIMAN
UTILITY
BOARD

GAS LINE
RELOCATION

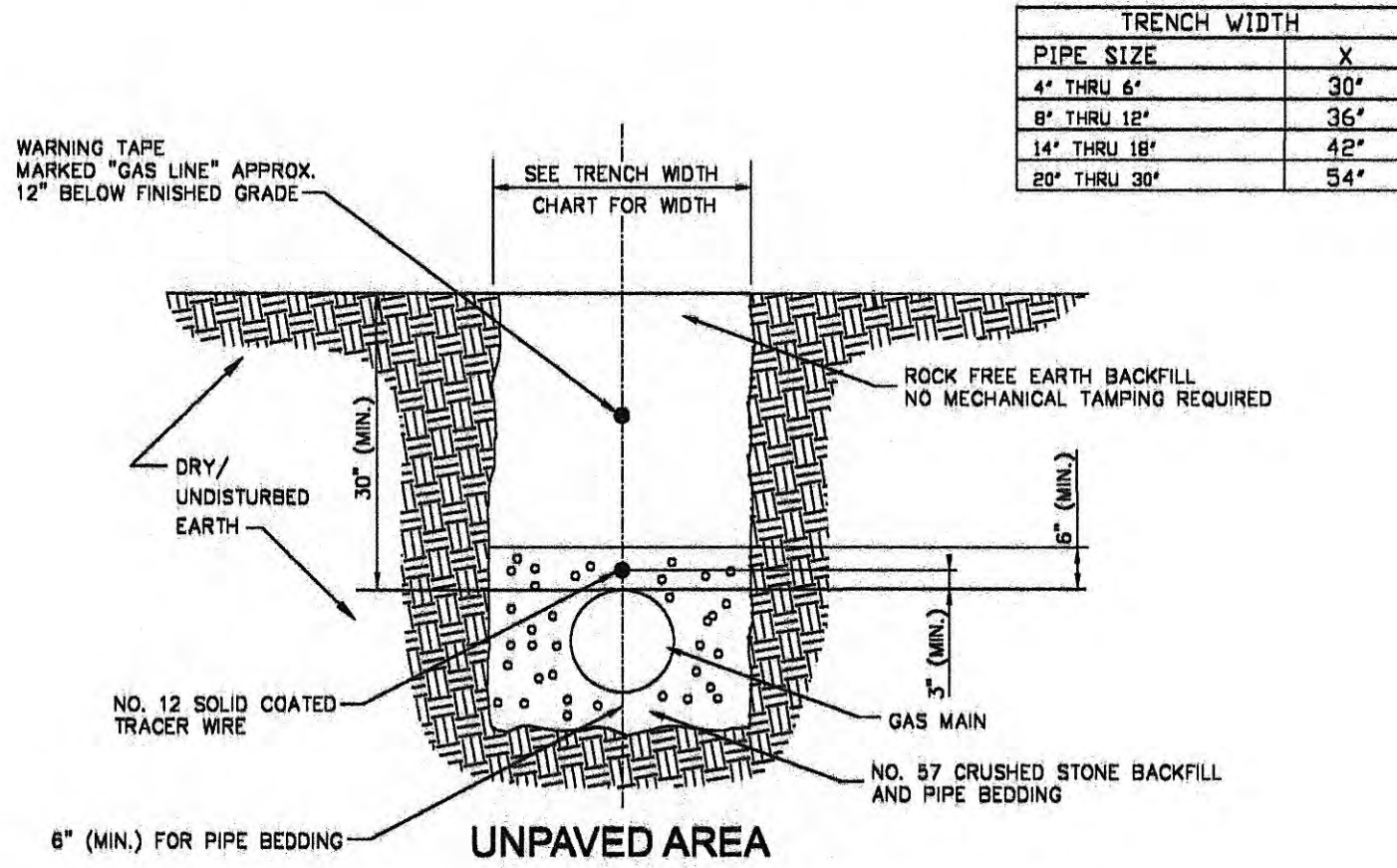
HASSLER MILL ROAD AND
BAUGARTNER ROAD
SCALE: 1"=50'



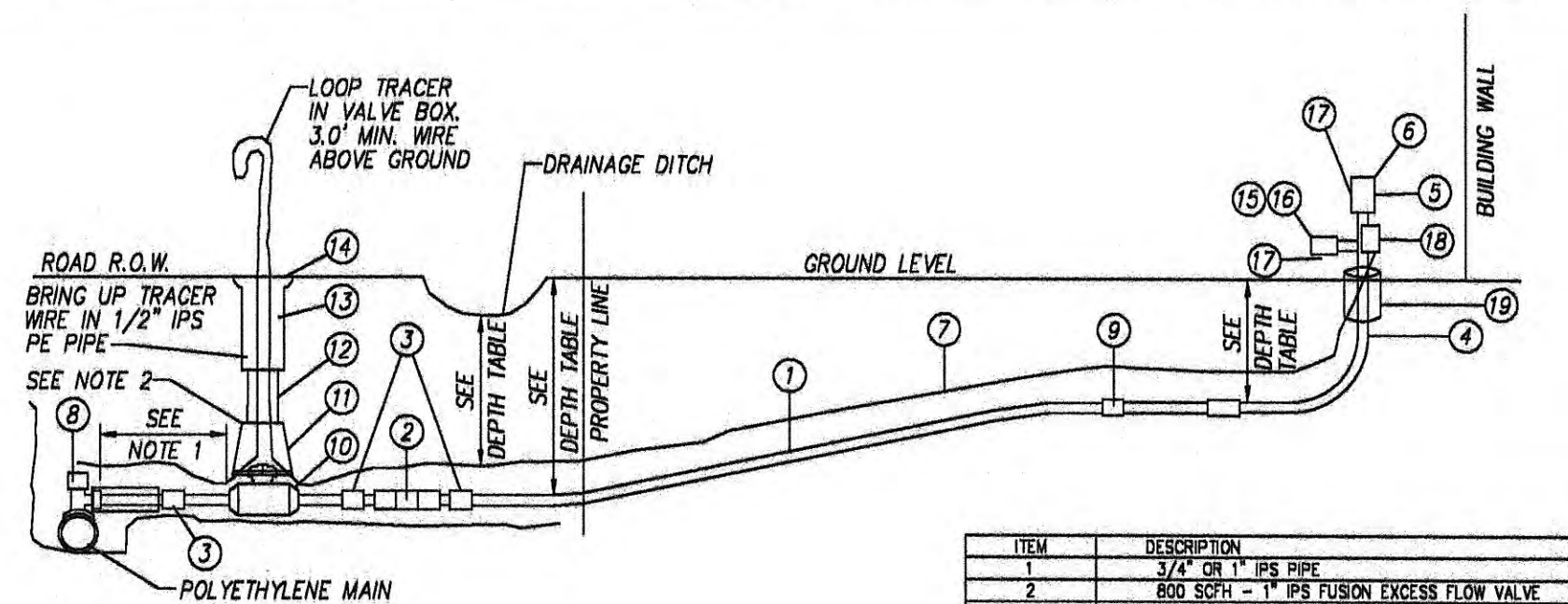


TYPICAL BACKFILL & BEDDING METHOD

- NOTES:
- EDGE TO BE SAWED WITH A CONCRETE SAW TO A NEAT SQUARED EDGE, BROOMED CLEAN OF DUST BEFORE TACK COAT IS APPLIED.
 - EDGES TO BE TACKED WITH EMULSIFIED ASPHALT TACK CRS-I OR CRS-II
 - CUTTING AND REPAIRING EXISTING PAVEMENT CONCRETE OR GRAVEL SHALL BE IN ACCORDANCE WITH OWNER'S REQUIREMENTS



TYPICAL BACKFILL & BEDDING METHOD

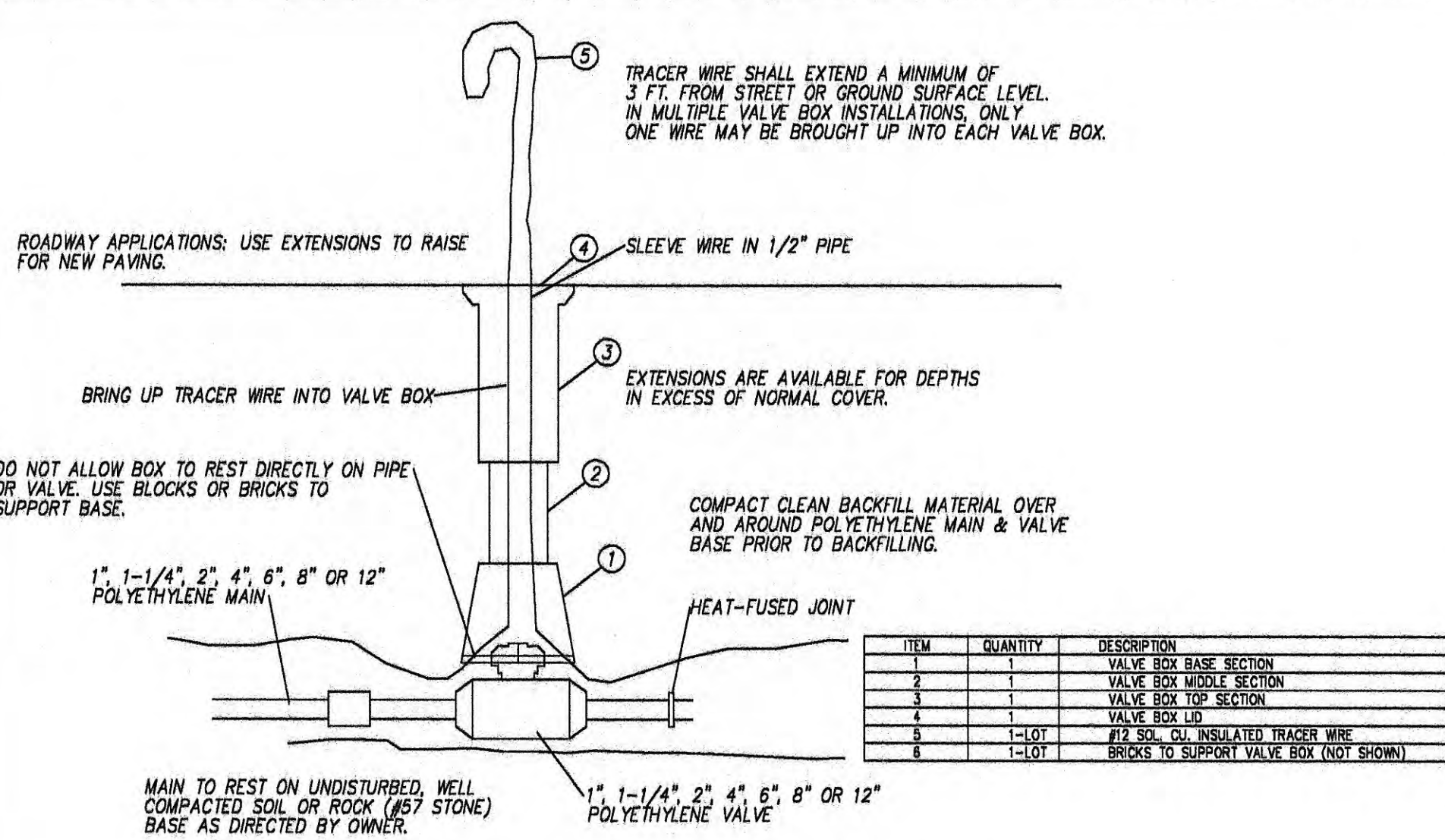


SERVICE CONNECTION

N.T.S.

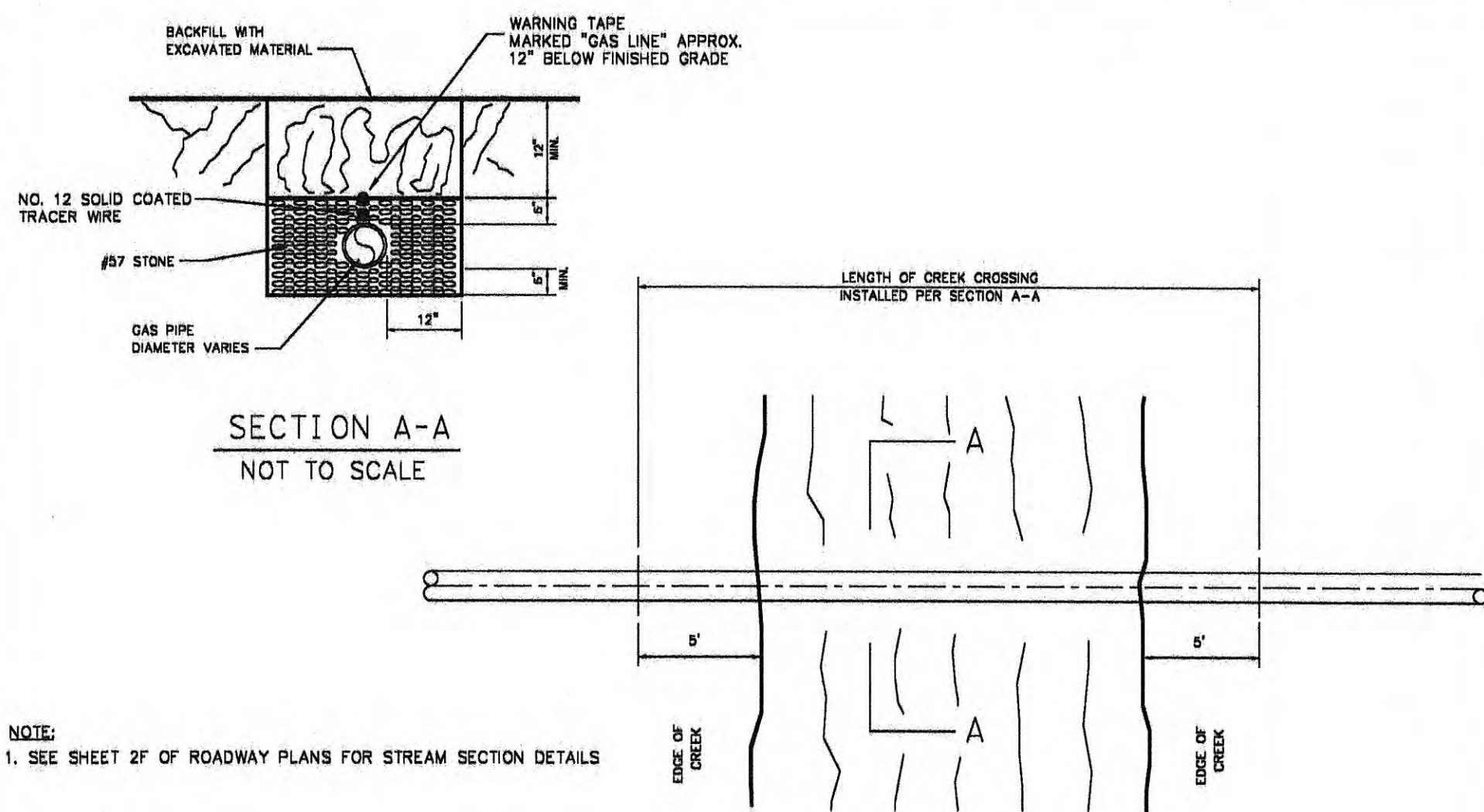
ITEM	DESCRIPTION
1	3/4" OR 1" IPS PIPE
2	1800 SOFT - 1" IPS FUSION EXCESS FLOW VALVE
3	1800 SOFT - 1" IPS FUSION EXCESS FLOW VALVE
4	3/4" OR 1" IPS SOCKET FUSION COUPLING
5	1-1/4" ANODELESS SERVICE RISER W/ BYPASS
6	1-1/4" METER VALVE
7	1-1/4" PLUG
8	#12 COATED COPPER CLAD STEEL TRACER WIRE
9	2" x 1" OR 12" x 3/4" IPS TAPPING TEE
10	6" x 1" OR 18" x 3/4" IPS TAPPING TEE
11	1-1/4" x 1" OR 1-1/4" x 3/4" REDUCER
12	1" DE 3/4" VALVE
13	1" IPS VALVE
14	VALVE BOX BASE
15	VALVE BOX MIDDLE SECTION #60-B
16	VALVE BOX TOP SECTION #64-B
17	VALVE BOX CAST IRON LID
18	1" BYPASS METER COCK
19	1" PLUG
20	METER VALVE LOCK
21	TRACER WIRE CLAMP FOR 1-1/4" SERVICE RISER
22	2" x 6" WIDE CASING PIPE (YELLOW)

STANDARD DEPTH	STATE R.O.W.	CUSTOMER PROPERTY
MINIMUM DEPTH	30"	24"
MAXIMUM DEPTH	28"	18"
	60"	30"



TYPICAL VALVE SETTING

N.T.S.



TYPICAL STREAM CROSSING

NOT TO SCALE

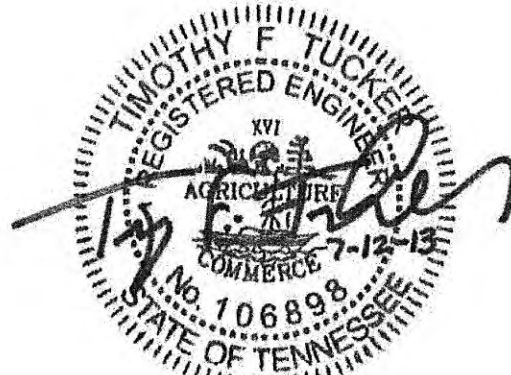
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U4-7
		73035-3209-14	

ROANE CO.

REV. 08-27-12:
REVISED PER T.D.O.T COMMENTS.

REV. 09-21-12:
REVISED PER T.D.O.T
CONSTRUCTION NUMBER CHANGE.

REV. 04-25-13:
REVISED PER T.D.O.T
ROADWAY REVISION.



HARRIMAN
UTILITY
BOARD

GAS LINE
RELOCATION

TYPICAL DETAILS
SCALE: AS SHOWN



INDEX OF DRAWINGS

DRAWING INDEX & ESTIMATED QUANTITIES
VICINITY MAP, LEGEND, & GENERAL NOTES
POLE LOCATIONS AND CONDUCTOR NOTES
ELECTRIC UTILITY RELOCATION SHEET
ASSEMBLY DETAILS

U5-1
U5-2
U5-3
U5-4 TO U5-7
U5-8 TO U5-11

ITEM	DESCRIPTION	DESCRIPTION	UNIT	TOTAL QUANTITY	PERCENT UTILITY	PERCENT PROJECT
① 790-03.01	POLE 40FT CLASS 2 WOOD	INSTALL 40-2 WOOD POLE	EACH	4	0%	100%
790-04.02	POLE 45FT CLASS 2 WOOD	INSTALL 45-2 WOOD POLE	EACH	5	0%	100%
790-04.06	POLE 45FT CLASS 1 METAL	INSTALL 45-1 STEEL POLE	EACH	2	0%	100%
790-04.07	POLE 45FT CLASS 2 METAL	INSTALL 45-2 STEEL POLE	EACH	9	0%	100%
790-05.01	POLE 50FT CLASS 1 WOOD	INSTALL 50-1 WOOD POLE	EACH	2	0%	100%
790-05.05	POLE 50FT CLASS 1 METAL	INSTALL 50-1 STEEL POLE	EACH	3	0%	100%
790-06.05	POLE 55FT CLASS 1 METAL	INSTALL 55-1 STEEL POLE	EACH	24	0%	100%
790-07.06	POLE 60FT CLASS 2 METAL	INSTALL 60-2 STEEL POLE	EACH	1	0%	100%
790-20.01	POLE 40FT CLASS 4 METAL	INSTALL 40-4 STEEL POLE	EACH	3	0%	100%
② 790-21.01	1Ø SGL PRIMARY SUPPORT 15KV	INSTALL (A1)	EACH	2	0%	100%
790-21.04	1Ø SGL SUPPORT 15KV	INSTALL (A1-1)	EACH	1	0%	100%
790-21.07	1Ø PRIMARY LG ANGLE 15KV	INSTALL (A4)	EACH	1	0%	100%
790-21.08	1Ø DEADEND 15KV	INSTALL (A5)	EACH	5	0%	100%
790-21.09	1Ø PRIMARY TAP 15KV	INSTALL (A5-2)	EACH	10	0%	100%
790-21.10	1Ø VERTICAL DDE 15KV	INSTALL (A6)	EACH	4	0%	100%
790-25.01	3Ø CROSSARM SGL 15KV	INSTALL (C1)	EACH	5	0%	100%
790-25.10	3Ø CROSSARM DBL DBL PRIM SUPPORT 15KV	INSTALL (C2)	EACH	2	0%	100%
790-25.21	3Ø CROSSARM DEADEND SGL 15KV	INSTALL (C7)	EACH	7	0%	100%
790-25.23	3Ø CROSSARM DDE 15KV	INSTALL (C8)	EACH	6	0%	100%
790-27.01	DBL CKT XARM 15KV	INSTALL (DC-C1)	EACH	9	0%	100%
790-27.06	DBL CKT DBL XARM SM ANG 15KV	INSTALL (DC-C2)	EACH	6	0%	100%
790-27.10	DBL CKT CROSSARM DDE 15KV	INSTALL (DC-C8)	EACH	5	0%	100%
⑩ 790-30.04	SECONDARY ASSEMBLIES MISC	INSTALL (SVC)	EACH	75	0%	100%
790-31.04	SERVICE CONDUCTOR 6 AL DUPLEX	INSTALL (DUPLEX)	L.F.	2,000	0%	100%
790-31.11	SERVICE CONDUCTOR 2 AL TRIPLEX	INSTALL (TRIPLEX)	L.F.	310	0%	100%
790-31.33	SERVICE CONDUCTOR 336.4 MCM AL SGL COND	INSTALL (336 QPLEX)	L.F.	50	0%	100%
790-32.01	DOWN GUY - THROUGH BOLT TYPE	INSTALL (E1-2)	EACH	70	0%	100%
790-32.07	OH GUY - THROUGH BOLT TYPE	INSTALL (E2-2)	EACH	6	0%	100%
790-32.25	ANCHOR (POWER INSTALLED HELIX SCREW ANCHOR)	INSTALL (FP-2)	EACH	45	0%	100%

FOOTNOTES

- ① INCLUDE ALL MATERIALS, LABOR AND EQUIPMENT FOR COMPLETE INSTALLATION INCLUDING BUT NOT LIMITED TO SETUP, TRAFFIC CONTROL, DIGGING HOLE, FILLING HOLE, BLASTING, BUTT WRAP OR SINGLE GROUND ROD, MGNV, NUMBERING POLE.
- ② ASSEMBLIES OF SIMILAR CONSTRUCTION BUT DIFFERING ONLY IN USE OF EPOXY VS. PORCELAIN INSULATORS OR FIBERGLASS VS. WOOD CROSSARM OR LACK OF NEUTRAL ASSEMBLY SHOULD BE GROUPED WITHIN THE SAME ITEM.
- ③ USE WITH COMPLETE SELF PROTECTED, CONVENTIONAL TRANSFORMERS WITH TANK MOUNTED FUSE AND ARRESTER AND TRANSFORMER WITH DOUBLE GAP ARRESTER AND INTERNAL FUSE, 15KV AND 25KV. INCLUDES ALL MISCELLANEOUS MATERIALS EXCEPT TRANSFORMER.
- ④ USE WITH ALL CLUSTER MOUNTED AND POLE MOUNTED THREE PHASE INSTALLATIONS, ALL CONNECTIONS, ALL SECONDARY VOLTAGES, FUSES AND ARRESTERS NOT INCLUDED, 15KV AND 25KV. INCLUDES ALL MISCELLANEOUS MATERIALS EXCEPT TRANSFORMERS.
- ⑤ INCLUDES MISCELLANEOUS MATERIALS EXCEPT SECTIONALIZER AND RECLOSER-SECTIONALIZER OR RECLOSER CALLED OUT SEPARATELY.
- ⑥ INCLUDES DROP WIRE, OH GUYS AND MAIN LINE WIRE.
- ⑦ INCLUDES MAINLINE POLES, SERVICE POLES AND STUB POLES
- ⑧ INCLUDES CROSSARMS, TRANSFORMERS, SWITCHES, ETC.
- ⑨ FIBERGLASS STRAIN INSULATED GUY QUANTITIES ARE APPROXIMATE. CONTRACTOR TO INSTALL FIBERGLASS STRAIN INSULATORS WHERE REQUIRED TO INSURE DOWN GUYS ARE CLEAR OF ENERGIZED CONDUCTORS AS REQUIRED BY THE NESC.

UTILITY INFORMATION

Harriman Utility Board
300 N. Roane St.
Harriman, TN 37748
Contact: Steve Ladd
Phone: (865) 882-3242 x 235
Fax: (865) 285-1047
Email: sladd@hub-tn.com

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U5-1
		73035-3209-14	

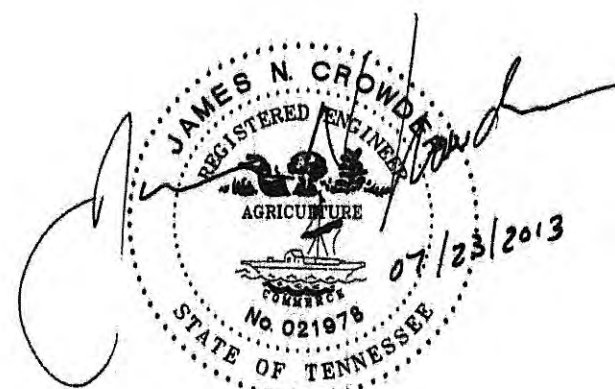
ROANE CO.

REV. 3-18-13: REVISED QUANTITIES FOR 790-04.07, 790-05.01, 790-05.05, 790-06.05, 790-20.01, 790-21.08, 790-25.01, 790-25.10, 790-25.21, 790-25.23, 790-27.01, 790-27.06, 790-30.04, 790-31.04, 790-31.11, 790-32.01, 790-32.07, 790-32.25, 790-40.02, 790-40.03, 790-42.08, 790-42.12, 790-60.01, 790-64.01, 790-70.04, 790-70.10 & 790-70.20. ADDED ITEM NUMBERS 790-27.10, 790-31.33, 790-41.01, 790-41.55, 790-43.47 AND ELIMINATED ITEM NUMBERS 790-03.03, 790-31.19, 790-40.05, 790-40.15, 790-40.18 & 790-58.06. UPDATED FOOT NOTES AND CONSTRUCTION YEAR.

REV. 4-22-13: REVISED QUANTITIES FOR 790-42.12, 790-98.01, 790-98.02 AND 790-98.03. REPLACED ITEM NUMBER 790-42.13 WITH 790-42.14. REVISED TDOT DESCRIPTIONS FOR 790-31.33, 790-32.25, 790-40.03, 790-42.12, 790-43.47, 790-70.20, 790-98.01, 790-98.03 AND 790-98.20. REVISED UNIT CALLOUT FOR ALL AND ADDED FOOT NOTE 17.

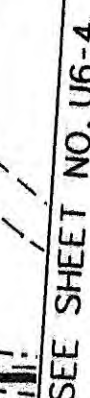
ITEM	DESCRIPTION	DESCRIPTION	UNIT	TOTAL QUANTITY	PERCENT UTILITY	PERCENT PROJECT
790-40.02	OH COND 2 7/1 ACSR SPARATE	INSTALL (#2 ACSR)	L.F.	5,500	0%	100%
790-40.03	OH COND 1/0 6/1 ACSR RAVEN	INSTALL (1/0 ACSR)	L.F.	1,720	0%	100%
790-40.05	OH COND 3/0 6/1 ACSR PIGEON	INSTALL (3/0 ACSR)	L.F.	660	0%	100%
790-40.09	OH COND 336.4 18/1 ACSR MERLIN	INSTALL (336 ACSR)	L.F.	3,030	0%	100%
⑬ 790-41.01	UG PRI COND 2 AL 15KV	INSTALL (#2 AL URD)	L.F.	165	0%	100%
790-41.45	UG SEC COND 2 AL TPLX	INSTALL (#2 AL URD TPLX)	L.F.	95	0%	100%
⑭ 790-41.55	UG SEC COND 1/0 AL QPLX	INSTALL (1/0 URD)	L.F.	205	0%	100%
790-42.08	2IN DIA PVC PIPE	INSTALL (2IN SCH 40 CNDUIT)	L.F.	60	0%	100%
790-42.12	CONDUIT-POLE MTD-2FT SCH 80 PVC	INSTALL (SVC RISER)	L.F.	7	0%	100%
⑰ 790-42.14	CONDUIT-POLE MTD-4FT SCH 80 PVC	INSTALL (TP3S)	L.F.	32	0%	100%
790-43.46	SECONDARY PULLBOX LARGE	INSTALL (HANDHOLE)	EACH	1	0%	100%
⑮ 790-43.47	PRIMARY PULLBOX	INSTALL (PULLBOX)	EACH	1	0%	100%
③ 790-46.01	1Ø TRANSFORMER	INSTALL (1TR)	EACH	20	0%	100%
④ 790-49.01	3Ø XFMR BNK POLE MTD NO FUSE/ARRESTERS	INSTALL (3TR)	EACH	1	0%	100%
790-58.03	CUTOUT KNIFE SWITCH, SNGL LOADBREAK 15KV	INSTALL (SW-DISC)	EACH	2	0%	100%
790-60.01	1Ø FUSE CUTOUT XARM MOUNT 15KV	INSTALL (1CO)	EACH	8	0%	100%
⑤ 790-60.09	3Ø SECTIONALIZER OR RECL 15KV	INSTALL (RECLOSER)	EACH	1	0%	100%
790-64.01	SEC MTG 1Ø 120/240 VOLTS	INSTALL (METER)	EACH	3	0%	100%
790-65.03	LIGHTNING ARRESTER ARM MTD 9 KV	INSTALL (LA)	EACH	1	0%	100%
790-68.10	MISCELLANEOUS ASSEMBLIES	INSTALL (BOLLARD)	EACH	2	0%	100%
⑨ 790-69.28	EXTENTION LINK-EPOXY-6FT	INSTALL (INSLINK)	EACH	12	0%	100%
790-70.04	STREET LIGHT W/ FRNG ANC BASE & MTL POLE	INSTALL (STL POLE)	EACH	5	0%	100%
⑬ 790-70.10	FLOOD LIGHT	INSTALL (PLT)	EACH	3	0%	100%
⑫ 790-70.20	STREET LIGHT (ALL)	INSTALL (SLT)	EACH	27	0%	100%
⑥ 790-98.01	REMOVE WIRE	REMOVE CONDUCTORS	L.F.	14,431	0%	100%
⑦ 790-98.02	REMOVE POLES	REMOVE POLES	EACH	72	0%	100%
⑧ 790-98.03	REMOVE FRAMING/ASSOCIATED APPARATUS	REMOVE ASSEMBLIES	EACH	395	0%	100%
⑪ 790-98.20	TREE AND BRUSH REMOVAL OFF ROW	EASEMENT CLEARING	LS	1	0%	100%

- ⑩ UNIT INCLUDES LABOR AND MATERIALS TO INSTALL OR TRANSFER A SECONDARY CONNECTION INCLUDING ALL POLE HARDWARE AND CONDUCTORS OF VARIOUS SIZES AND NUMBER.
- ⑪ INCLUDES CLEARING EASEMENTS FOR ELECTRIC LINES NOT COVERED BY TDOT PROJECT CLEARING.
- ⑫ SLT (STREET LIGHT) INCLUDES ALL CONDUCTORS, CONNECTIONS, LUMENAIRE, AND LABOR TO INSTALL STREET LIGHT.
- ⑬ PLT (PRIVATE LIGHT) INCLUDES ALL CONDUCTORS, CONNECTIONS, LUMENAIRE, AND LABOR TO INSTALL PRIVATE LIGHT.
- ⑭ INCLUDES URD SERVICE SPLICE.
- ⑮ PULLBOX TO BE 3'x5' H20 TRAFFIC RATED.
- ⑯ INCLUDES SHEILDLED CABLE, FULL NEUTRAL CABLE, 1/3 NEUTRAL CABLE, 100% AND 133% INSULATION LEVELS.
- ⑰ POLE MOUNTED CONDUIT INCLUDES ALL LABOR AND MATERIAL INCLUDING TERMINATORS, BRACKETS, JUMBERS, CONNECTORS AND ARRESTERS TO COMPLETE ONE TP3S AS SHOWNIN PROJECT DETAILS.



HUB Harriman Utility Board	
JOB NUMBER: 81128 DESIGNED: CED DRAWN: RKW CHECKED: JNC	Allen&Hoshall engineering since 1915 8331 E. WALKER SPRINGS LANE, SUITE 102 KNOXVILLE, TENNESSEE 37923 (865) 693-7881 (865) 693-7824
SCALE N.T.S.	DATE 03.18.2013
DRAWING INDEX & ESTIMATED QUANTITIES	

ROANE



STA. 35+00

MATCH LINE



COORDINATE VALUES ARE NAD/83(1995)
AND ARE DATUM ADJUSTED BY THE
FACTOR 1.0001- & TIED TO THE TGRN.

BWSC **BARGE WAGGONER SUMNER & CANNON, INC.**
10133 Sherrill Blvd., Suite 200, Knoxville, Tennessee 37932
PHONE (865) 637-2810 FAX (865) 673-9554
BWSC PROJECT NO. 32119-22

AT&T
TENNESSEE

UTILITY RELOCATION

STA. 21+00 TO STA. 35+00

SCALE: 1"=50'

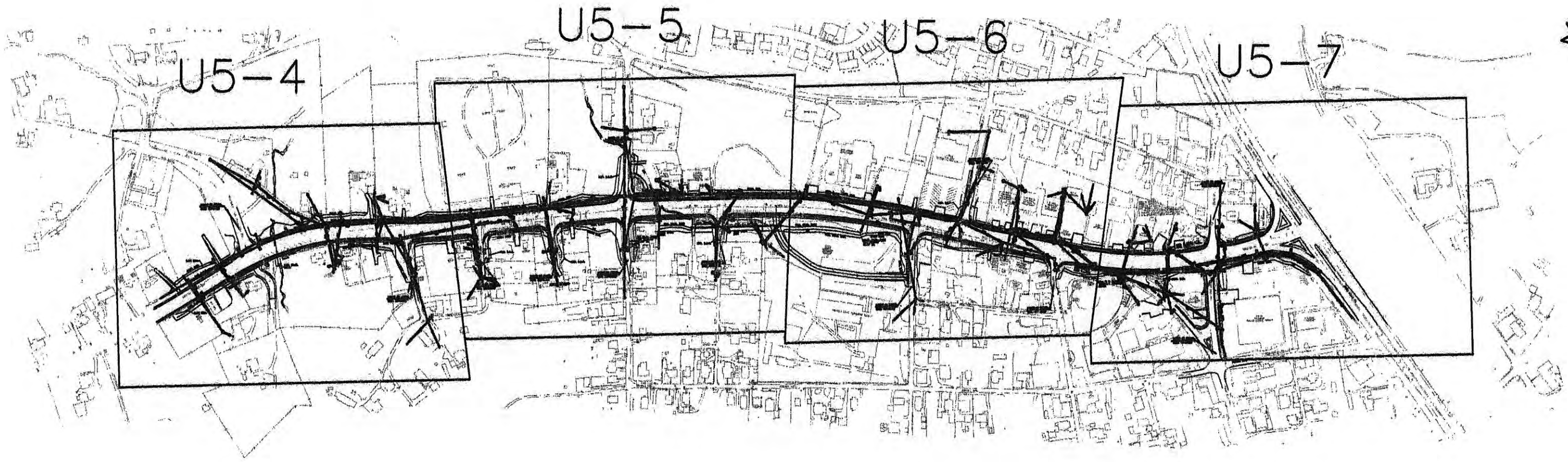
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U5-2
		73035-3209-14	

ROANE CO.

REV. 3-18-13: UPDATED LEGEND, CONSTRUCTION YEAR AND NOTE 28.

REV. 4-22-13: UPDATED PROJECT NUMBER AND REMOVED 04 FROM SHEET NUMBERING.

VICINITY MAP



GENERAL NOTES

1. IN GENERAL, THE CONTRACTOR SHALL BUILD AND INSTALL 13KV OVERHEAD DISTRIBUTION AND SECONDARY FACILITIES AS SHOWN ON THE DRAWINGS.

2. PRIOR TO SUBMITTING HIS BID, THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR CONTACTING OWNERS OF ALL POTENTIALLY AFFECTED UTILITIES IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATIONS AND/OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF WORK FOR THE PROJECT. WHILE SOME WORK MAY BE REQUIRED "AROUND" UTILITY FACILITIES THAT WILL REMAIN IN PLACE, OTHER UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTORS OPERATIONS.

3. CONTRACTOR SHALL PROVIDE OWNER AND PROJECT ENGINEER WITH (1) SET OF CLEAN, CLEARLY MARKED AS-BUILT DRAWINGS AT END OF PROJECT. THESE DRAWINGS SHALL REFLECT ANY AND ALL CHANGES TO ELECTRONIC PLANS DURING CONSTRUCTION.

4. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY EXCAVATION WORK REQUIRED TO LOCATE UNDERGROUND UTILITIES. THE CONTRACTOR IS ALSO REQUIRED TO NOTIFY ANY AFFECTED UTILITY OWNERS PRIOR TO DIGGING. IN THE EVENT OF ACCIDENTAL INTERRUPTION OF SERVICE, CONTRACTOR WILL IMMEDIATELY NOTIFY THE UTILITY OWNER.

5. THE LOCATIONS OF UTILITIES SHOWN WITHIN THESE DRAWINGS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF HIS PLAN OF OPERATION IN THE AREA OF THE UTILITIES PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL REQUEST THE UTILITY OWNER TO PROPERLY LOCATE AND MARK THEIR RESPECTIVE UTILITY ON THE GROUND. THIS NOTIFICATION SHALL BE GIVEN AT LEAST THREE (3) BUSINESS DAYS PRIOR TO COMMENCEMENT OF OPERATIONS IN THE VICINITY OF THE UTILITY.

6. THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES AND THE GENERAL PUBLIC FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT.

7. SOME UTILITIES CAN BE LOCATED BY CALLING THE TENNESSEE ONE CALL SYSTEM INC. AT 811.

8. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE N.E.S.C., N.E.C., AND ANY AND ALL OTHER APPLICABLE LOCAL SAFETY CODES.

9. THESE DRAWINGS ARE NOT CONSIDERED A COMPLETE SET OF CONTRACT DOCUMENTS WITHOUT THE ACCOMPANYING TECHNICAL SPECIFICATIONS.

9. SEE TECHNICAL SPECIFICATIONS FOR ANY UNITS NOT SPECIFICALLY DETAILED IN THESE DRAWINGS.

10. THE ENGINEER WILL FURNISH DESIGN TENSION AND SAG DATA AS REQUIRED. IT IS THE CONTRACTORS RESPONSIBILITY TO CONTACT THE ENGINEER PRIOR TO STRINGING CONDUCTORS FOR SAGGING AND STRINGING DATA.

11. ALL POLES SHALL INCLUDE GROUND RODS. GROUND RODS SHALL BE PAID FOR AS PART OF THE POLE AND ARE NOT A SEPARATE ITEM.

12. ALL NON-STEEL CROSSARMS ON THIS PROJECT ARE TO BE HEAVY DUTY BRACELESS FIBERGLASS UNLESS OTHERWISE SPECIFIED ON THE CONTRACT DRAWINGS.

13. THE UTILITY WILL FURNISH ALL TRANSFORMERS TO BE INSTALLED AS SHOWN ON PLAN DRAWINGS.

14. THE OWNER WILL PROVIDE TRANSFORMER INFORMATION SHEETS AND CONTRACTOR WILL BE REQUIRED TO COMPLETE AND RETURN A TRANSFORMER INFORMATION SHEET FOR EACH UNIT REMOVED OR INSTALLED ON THE PROJECT.

15. ALL EXISTING CONDUCTORS NOT TO BE REPLACED BUT INDICATED AS ATTACHED TO NEW POLES SHALL BE TRANSFERRED. THIS WORK IS CONSIDERED PART OF THE PROJECT AND IS NOT A SPECIFIC PAY ITEM.

16. WHERE CONDUCTORS ARE TOO SHORT TO BE PROPERLY SAGGED AT NEW POLE LOCATION, ADDITIONAL CONDUCTOR MAY BE SPLICED A MINIMUM OF 10' FROM POLE STRUCTURES.

17. CONTRACTOR TO TRANSFER EXISTING CONDUCTORS THAT ARE NOT BEING SPECIFICALLY REPLACED FROM REMOVED POLE TO NEW POLES AND RESAG ALL CONDUCTORS TO PROPER TENSIONS. SPlice ADDITIONAL CONDUCTOR AS REQUIRED TO ACHIEVE PROPER SAG. NO SPlice SHALL BE WITHIN 10' OF ANY POLE OR STRUCTURE.

18. CONTRACTOR TO ENSURE CORRECT CIRCUIT PHASING ON ALL CONDUCTORS IS MAINTAINED THROUGHOUT THE PROJECT.

19. CONTRACTOR TO COORDINATE ALL METER WORK WITH OWNER.

20. CONTRACTOR TO INSTALL ALL GUYS AT 3 TO 2 LEAD UNLESS OTHERWISE INDICATED ON PLAN DRAWINGS OR IN GUYING DETAILS.

21. ANY CONTRACTOR OR SUBCONTRACTOR WHO WILL BE PERFORMING THE WORK OF THE ELECTRIC UTILITY CONSTRUCTION SHALL SUBMIT QUALIFICATION REQUIREMENTS DIRECTLY TO TDOT FOR APPROVAL BY 30 DAYS PRIOR TO THE LETTING OF THE CONTRACT.

22. THE WORK OF ELECTRIC RELOCATION AS INDICATED WITHIN THESE CONTRACT DRAWINGS SHALL BE COVERED UNDER STANDARD SPECIFICATIONS FOR UTILITY CONSTRUCTION AS PART OF THE TDOT PROPOSAL CONTRACT.

23. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL ELECTRIC FACILITIES AT FINAL GRADE AS SHOWN. ANY TEMPORARY INSTALLATIONS OR GRADING ARE THE RESPONSIBILITY OF THE CONTRACTOR.

24. CONTRACTOR TO ENSURE THAT ANY STEEL POLES PLACED IN FILL AREAS SHALL HAVE SUFFICIENT ANTI-CORRISION COATING TO 18" ABOVE FINISHED GRADE.

25. THE UTILITY WILL PROVIDE STAKING DATA INCLUDING NORTHING, EASTING, AND STATION/OFFSET DATA AS REQUIRED OR SHOWN ON DRAWINGS.

26. REMOVAL POLES ARE CATEGORIZED AS: TYPE A = 35' AND BELOW TYPE B = 40' TO 60' TYPE C = 65' AND ABOVE

27. ALL UNDERGROUND CONDUCTOR TERMINATORS AND SPLICES ARE TO BE CONSIDERED PART OF THE PROJECT AND ARE NOT SPECIFIC PAY ITEMS UNLESS INDICATED OTHERWISE ON THE CONTRACT DRAWINGS.

28. ALL EXISTING POLES WITH REMOVED ELECTRIC FACILITIES ARE TO BE TOPPED 2' ABOVE HIGHEST COMMUNICATION ATTACHMENT IF COMMUNICATION CABLES ARE ATTACHED TO THE POLE. THIS IS NOT A PAY ITEM AND IS CONSIDERED PART OF THE PROJECT. POLE TOPING DOES NOT QUALIFY AS POLE REMOVAL.

29. ROCK MAY BE ENCOUNTERED THROUGHOUT THE PROJECT. CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO PERFORMING ANY INSTALLATIONS IN ROCK.

30. ON POLES WHERE TRANSFORMERS ARE BEING REMOVED AND INSTALLED, THE EXISTING TRANSFORMER MAY BE RE-USED IF IN GOOD CONDITION.

31. POLE STRUCTURES SET WITHIN 3' OF DITCHES SHALL BE BACKFILLED AND TAMPED WITH CRUSHED LIMESTONE. PLACE RIPRAP A MINIMUM OF 2' RADIUS FROM EDGE OF POLE TO A MINIMUM HEIGHT OF 8' ABOVE GRADE LEVEL.

32. RAIN WATER WHICH COLLECTS ON THE UTILITY TRENCH SHALL BE PUMPED INTO A TEMPORARY DEWATERING STRUCTURE OR FILTER BAG.

33. SILT FENCE TO BE INSTALLED ON THE DOWNSTREAM SIDE OF STOCKPILED SOIL. TRENCHING ACROSS WET WEATHER CONVEYANCES TO BE DONE DURING NO FLOW CONDITIONS AND STABILIZED BY THE END OF THE WORK DAY.

34. UTILITY CROSSING FOR PERENNIAL STREAMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TDOT STANDARDS, AND NO WORK SHALL BE CONDUCTED IN FLOWING WATERS. TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) REGULATIONS APPLY TO THE UTILITIES IN THIS PROJECT IN REGARDS TO EROSION CONTROL. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE STORM WATER POLLUTION PREVENTION PLANS.

35. IT IS THE RESPONSIBILITY OF THE UTILITIES INSTALLER TO PROTECT FROM EROSION EXPOSED EARTH RESULTING FROM HIS OPERATIONS AND TO PROVIDE FOR CONTAINMENT OF SEDIMENT THAT MAY RESULT FROM HIS WORK. PRIOR TO BEGINNING WORK, ADEQUATE MEASURES MUST BE IN PLACE TO TRAP ANY SEDIMENT THAT MAY TRAVEL OFF-SITE IN THE EVENT OF RAIN. DURING THE PROGRESSION OF HIS WORK, EXPOSED EARTH AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE TO PREVENT EROSION. AT NO TIME SHALL EXPOSED EARTH RESULTING FROM HIS OPERATIONS HAVE UNPROTECTED ACCESS TO FLOWING OFF-SITE AND BECOME WATERS OF THE STATE.

36. FOR THE INSTALLATION OF BURIED UTILITIES (PIPES AND CABLES), TRENCHES SHALL BE BACKFILLED DAILY AS CONSTRUCTION PROCEEDS. BACKFILLED TRENCHES SHALL BE SEEDED AND MULCHED OR SODDED DAILY OF POSSIBLE, BUT NO LATER THAN 7 DAYS AFTER TRENCHING. ANY TEMPORARY SPOIL PILE OF EXCAVATED EARTH SHALL BE LOCATED WITHIN THE TDOT ROW EROSION CONTROL MEASURES OR RECEIVE SEPARATE EROSION CONTROL MEASURES WILL BE INSTALLED UNTIL SUCH TIME THE TRENCH IS BACKFILLED.

37. TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) REGULATIONS APPLY TO THE UTILITIES IN THIS PROJECT IN REGARDS TO EROSION CONTROL. THE STATE CONTRACTOR IS ONLY RESPONSIBLE FOR EROSION CONTROL MEASURES FOR UTILITY CONSTRUCTION THAT IS INCLUDED IN THE STATE CONTRACT WORK.

38. ALL UNDERGROUND CONDUCTOR TERMINATORS AND SPLICES ARE TO BE CONSIDERED PART OF THE PROJECT AND ARE NOT SPECIFIC PAY ITEMS UNLESS INDICATED OTHERWISE ON THE CONTRACT DRAWINGS.

39. ALL UNDERGROUND HANDHOLES TO BE FLUSH MOUNTED AND HS-20-44 RATED. HANDHOLE LIDS TO BE PERMANENTLY MARKED AT "ELECTRIC".

40. ALL UNUSED UNDERGROUND CONDUCTORS TO BE ABANDONED IN PLACE.

LEGEND

---	PROPOSED TDOT ROW
+++P---	3 PHASE EXISTING
---+P---	SINGLE PHASE EXISTING
---P---	3 PHASE PROPOSED
---P---	SINGLE PHASE PROPOSED
-----	UNDERGROUND
---H---	EXISTING/PROPOSED DUPLEX
---HH---	EXISTING/PROPOSED TRIPLEX
---HHH---	EXISTING/PROPOSED QUADRIplex
○	TRAFFIC SIGNAL POLE
○	EXISTING POLE
●	PROPOSED POLE
⊙	REPLACEMENT POLE
△	EXISTING TRANSFORMER
▲	PROPOSED TRANSFORMER
✱	REMOVAL/EXISTING STREET LIGHT
✱	PROPOSED STREET LIGHT
✱	REMOVAL/EXISTING PRIVATE LIGHT
✱	PROPOSED PRIVATE LIGHT
---	SPAN GUY
---	PROPOSED ANCHOR
---	REMOVAL ANCHOR
---	EXISTING ANCHOR
---	SW-GANG
---	SW-DISC
---	FUSE
---	RECLOSER
---	CAP BANK



HUB

Harriman Utility Board

JOB NUMBER: 81128
DESIGNED: CED
DRAWN: RKW
CHECKED: JNC

Allen&Hoshall
engineering since 1915
8331 E. WALKER SPRINGS LANE, SUITE 102
KNOXVILLE, TENNESSEE 37923
(865) 693-7881 (865) 693-7824

SCALE
N.T.S.

DATE
03 18, 2013

VICINITY MAP , LEGEND, &
GENERAL NOTES

PROPOSED STRUCTURE LOCATIONS				
POLE	STATION	OFFSET	NORTHING	EASTING
P1	9+91.89	-47.57	2395245.67	576618.58
P1-2	9+89.20	35.06	2395305.07	576676.09
P2	11+24.66	-43.35	2395153.08	576714.07
P2-2	11+34.83	35.76	2395201.02	576777.77
P3	13+8.62	-47.16	2395019.66	576851.66
P5	14+99.55	-44.53	2394915.74	577016.88
P5-1	14+74.57	-74.86	2394901.42	576979.53
P5-3	15+62.23	-91.56	2394843.63	577057.33
P5-5	13+64.22	-249.11	2394822.96	576777.65
P6	16+47.68	-43.46	2394854.19	577160.82
P6-2	16+25.25	45.04	2394945.42	577168.85
P6-4	16+2.21	135.34	2395039.03	577177.08
P7	18+3.06	-44.87	2394808.87	577312.77
P7-1	17+86.86	-56.18	2394802.17	577294.02
P7-2	17+90.36	61.08	2394914.44	577328.09
P7-4	18+59.05	45.44	2394881.61	577390.21
P7-6	19+42.18	181.23	2394991.00	577506.67
P8	20+52.52	-52.43	2394734.9	577547.18
P9	21+70.46	-45.81	2394699.79	577658.12
P9-2	21+82.14	71.97	2394805.46	577711.43
P9-4	21+96.03	211.96	2394931.06	577774.80
P10	23+27.34	-45.71	2394643.40	577804.52
P11	24+97.55	-45.56	2394582.24	577963.36
P11-2	24+93.11	136.92	2394754.08	578024.93
P12	26+55.53	-47.50	2394525.03	578111.90
P13	28+68.02	-57.01	2394447.96	578312.08
P13-1	28+29.29	-212.33	2394311.67	578228.12
P13-2	28+6.03	163.78	2394677.28	578319.93
P14	30+57.27	-53.10	2394397.40	578496.31
P15	31+73.23	-53.26	2394365.79	578607.96
P17	32+91.98	-51.20	2394335.59	578722.82
P17-2	31+79.35	74.62	2394487.22	578648.52
P17E	31+78.16	280.94	2394686.14	578703.31
P17A	34+24.47	-50.87	2394301.29	578853.21
P18	35+57.29	-56.64	2394266.99	578983.61
P18-2	34+78.46	45.00	2394382.45	578927.54
P19	38+37.98	-46.99	2394236.00	579268.08
P19-2	38+31.38	46.00	2394329.25	579268.77
P20	39+46.16	-50.75	2394224.10	579377.30
P20-1	39+85.85	126.14	2394398.74	579426.80
P20-2	40+28.74	305.61	2394576.04	579477.05
P20-3	40+86.88	307.86	2394575.54	579535.23
P20-4	40+49.50	394.70	2394664.05	579501.99
P20-5	40+77.52	514.95	2394782.84	579535.66
P21	41+88.21	-48.02	2394215.27	579619.63
P21-2	41+64.84	45.07	2394309.36	579600.69
P22	44+27.16	-45.28	2394206.72	579858.44
P22-1	44+14.66	-119.60	2394133.07	579842.45
P22-2	44+35.13	58.39	2394309.89	579871.30
P23	46+5.85	-43.28	2394200.27	580037.01
P24	47+36.90	45.38	2394281.68	580174.02
P25	48+90.94	73.64	2394288.47	580334.25
P29	53+26.63	-50.09	2394032.84	580712.71
P29-1	52+5.43	77.31	2394195.55	580651.64
P31	55+67.85	87.66	2394024.47	580989.64

PROPOSED CONDUCTOR NOTES					
	P1-2	P2-2	L1	L2	P5-1
INSTALL (336 ACSR)					120
INSTALL (#2 ACSR)	20	20			
INSTALL (1/0 ACSR)					
INSTALL (3/0 ACSR)					40
INSTALL (336 QPLEX)					
INSTALL (#2 TRIPLEX)					
INSTALL (#6 DUPLEX)	10		116	104	
INSTALL (#2 AL URD)					
INSTALL (1/0 URD)					

	P5-5	P6	P6-4	P7-2	P7-4
INSTALL (336 ACSR)	705				
INSTALL (#2 ACSR)			20		212
INSTALL (1/0 ACSR)					
INSTALL (3/0 ACSR)	235				
INSTALL (336 QPLEX)					
INSTALL (#2 TRIPLEX)				107	
INSTALL (#6 DUPLEX)		157			
INSTALL (#2 AL URD)					
INSTALL (1/0 URD)					

	P7-6	P9-2	P9-4	P9-2E	P13-1
INSTALL (336 ACSR)					
INSTALL (#2 ACSR)	320	236	282		
INSTALL (1/0 ACSR)					644
INSTALL (3/0 ACSR)					
INSTALL (336 QPLEX)					
INSTALL (#2 TRIPLEX)			141	21	
INSTALL (#6 DUPLEX)	160				
INSTALL (#2 AL URD)					
INSTALL (1/0 URD)					

	P13-2	P14	P15	P17E	P17-2
INSTALL (336 ACSR)					
INSTALL (#2 ACSR)				332	380
INSTALL (1/0 ACSR)	920				
INSTALL (3/0 ACSR)					
INSTALL (336 QPLEX)			44		
INSTALL (#2 TRIPLEX)					
INSTALL (#6 DUPLEX)		192		166	
INSTALL (#2 AL URD)					
INSTALL (1/0 URD)					

	P20	P20-1	P20-2	P20-3	P20-4
INSTALL (336 ACSR)					
INSTALL (#2 ACSR)		576	892	236	368
INSTALL (1/0 ACSR)					
INSTALL (3/0 ACSR)					
INSTALL (336 QPLEX)					
INSTALL (#2 TRIPLEX)					
INSTALL (#6 DUPLEX)				59	
INSTALL (#2 AL URD)					150
INSTALL (1/0 URD)	110				

PROPOSED CONDUCTOR NOTES						
	P20-5	P22-2	P23	P23E	P24	P24-1
INSTALL (336 ACSR)					960	
INSTALL (#2 ACSR)	496			80		
INSTALL (1/0 ACSR)						
INSTALL (3/0 ACSR)					160	
INSTALL (336 QPLEX)						
INSTALL (#2 TRIPLEX)	10					
INSTALL (#6 DUPLEX)		76	179			102
INSTALL (#2 AL URD)						
INSTALL (1/0 URD)						

	P25	P25E1	P29	P31	P31E
INSTALL (336 ACSR)	966				
INSTALL (#2 ACSR)		25			
INSTALL (1/0 ACSR)					
INSTALL (3/0 ACSR)	161				
INSTALL (336 QPLEX)					
INSTALL (#2 TRIPLEX)					
INSTALL (#6 DUPLEX)	161		64	101	137
INSTALL (#2 AL URD)					
INSTALL (1/0 URD)	76				

NOTE: STATION AND OFFSET PROVIDED FOR REFERENCE ONLY.
DO NOT USE STATION AND OFFSET FOR STAKING.
NORTHING AND EASTING ARE PROVIDED FOR STAKING USE.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U5-3
		73035-3209-14	

ROANE CO.

REV. 3-18-3: REVISED POLE LOCATIONS FOR P17-2, P17E, P20-1 AND P22-2. ADDED POLE LOCATIONS FOR P24-1 AND P30-1. UPDATED CONDUCTOR NOTES AND CONSTRUCTION YEAR.

REV. 4-22-13: UPDATED PROJECT NUMBER AND REMOVED 04 FROM SHEET NUMBERING.



Harriman Utility Board

JOB NUMBER: 81128
DESIGNED: CED
DRAWN: RKW
CHECKED: JNC

SCALE
N.T.S.

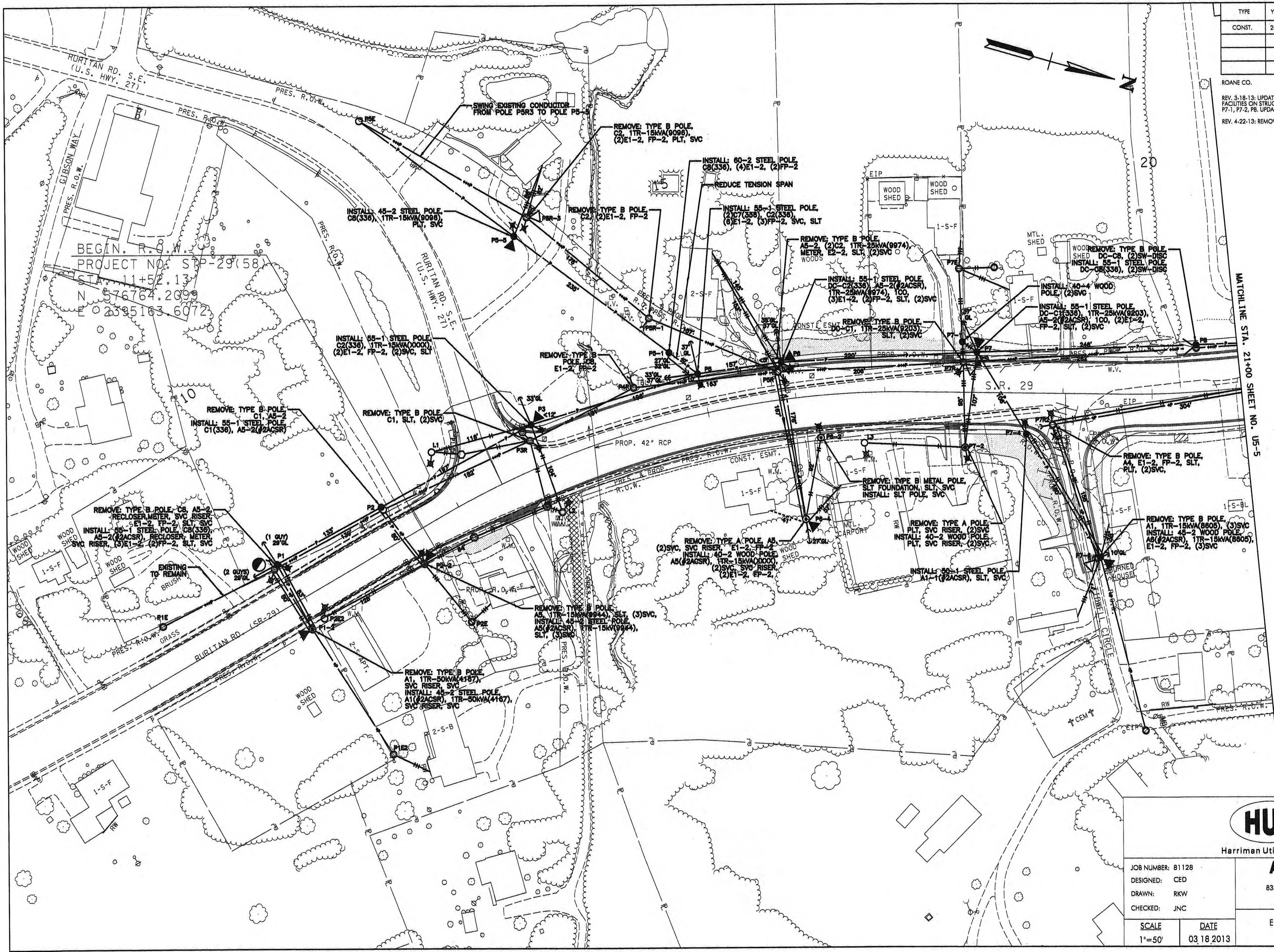
DATE
03.18.2013

Allen&Hoshall
engineering since 1915
8331 E. WALKER SPRINGS LANE, SUITE 102
KNOXVILLE, TENNESSEE 37923
(865) 693-7881 (865) 693-7824

POLE LOCATIONS AND
CONDUCTOR NOTES

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U5-4
		73035-3209-14	

ROANE CO.
 REV. 3-18-13: UPDATED EXISTING AND PROPOSED ELECTRIC FACILITIES ON STRUCTURES P1, P1-2, P2, P3, P5, P6-2, P6-4, P7-1, P7-2, P8. UPDATED CONSTRUCTION YEAR.
 REV. 4-22-13: REMOVED 04 FROM SHEET NUMBERING.



MATCH LINE STA. 21+00 SHEET NO. U5-5





HUB
Harriman Utility Board

JOB NUMBER: 81128 DESIGNED: CED DRAWN: RKW CHECKED: JNC		Allen & Hoshall engineering since 1915 8331 E. WALKER SPRINGS LANE, SUITE 102 KNOXVILLE, TENNESSEE 37923 (865) 693-7881 (865) 693-7824
SCALE: 1"=50' DATE: 03.18.2013		

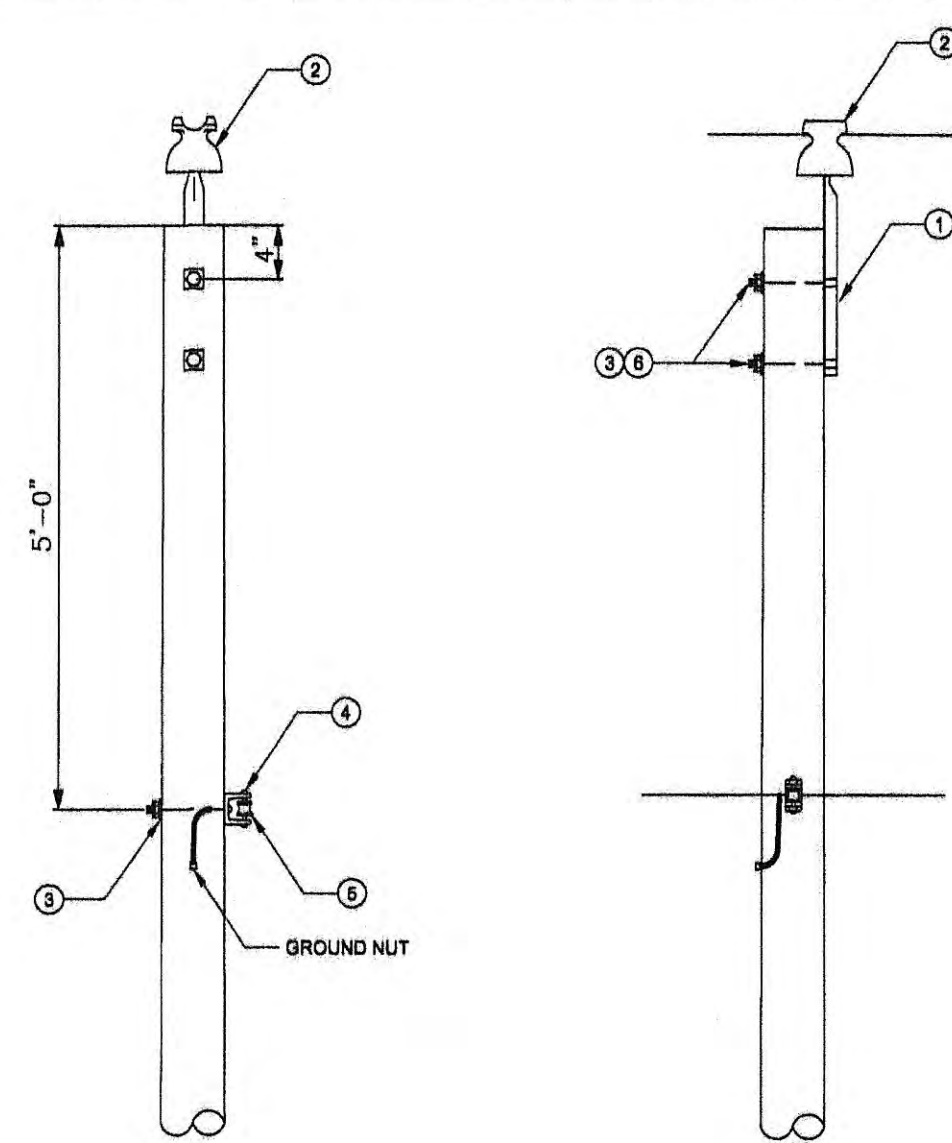
ELECTRIC UTILITY RELOCATION
 STA 000+00 TO STA 21+00

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U5-8
		73035-3209-14	

ROANE CO.

REV. 3-18-2013: UPDATED CONSTRUCTION YEAR.

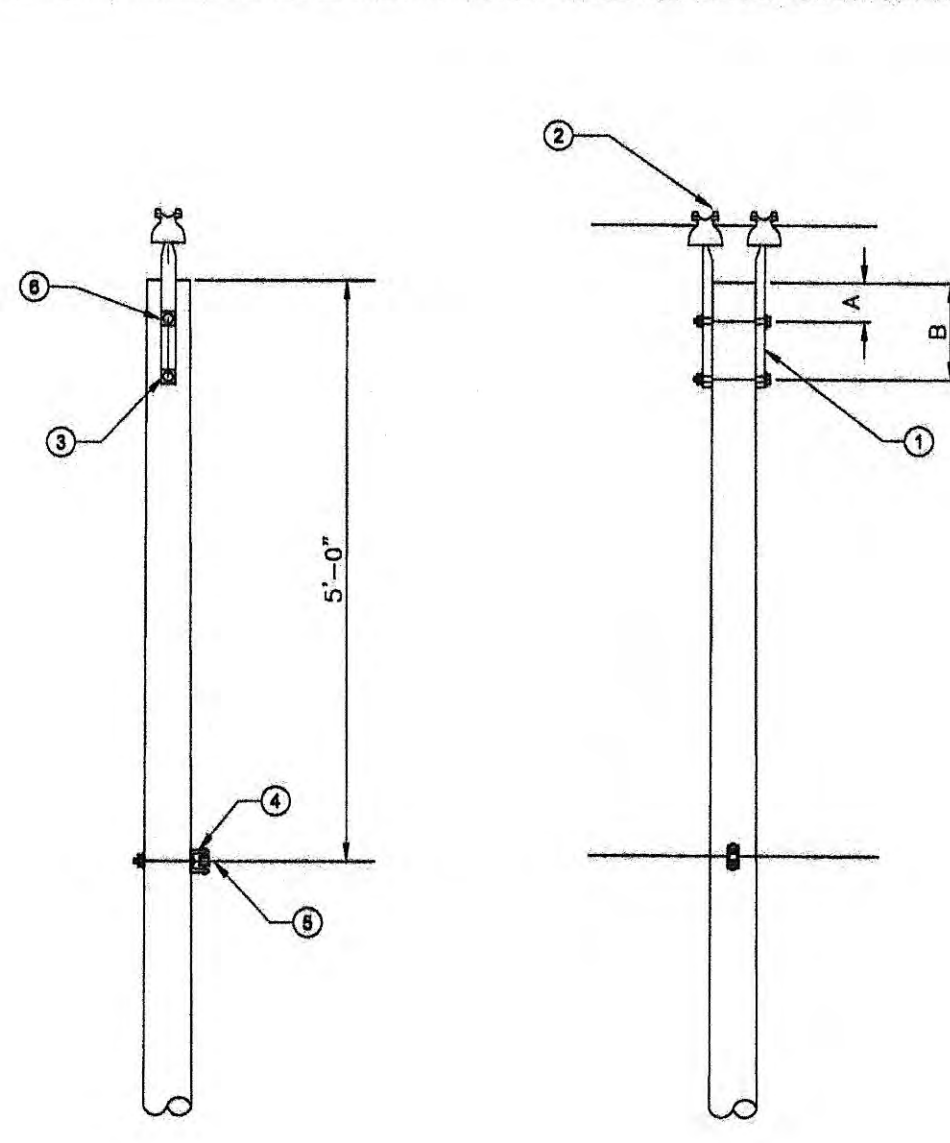
REV. 4-22-13: REMOVED 04 FROM SHEET NUMBERING.



NOTES:
1. USE FLAT WASHERS ON FLAT SURFACES AND CURVED WASHERS ON CURVED SURFACES.
2. SPLIT BOLT USED ON WOOD POLES ONLY.

ID	QTY.	DESCRIPTION
1	1	PIN, FIBERGLASS STRAIGHT RIDGE
2	1	INSULATOR, POLE TOP
3	3	THRU BOLT, 5/8" X REQ'D LENGTH
4	1	CLEVIS, SECONDARY
5	1	INSULATOR, SECONDARY DE WHITE
6	3	WASHER, SQUARE, 3" CURVED

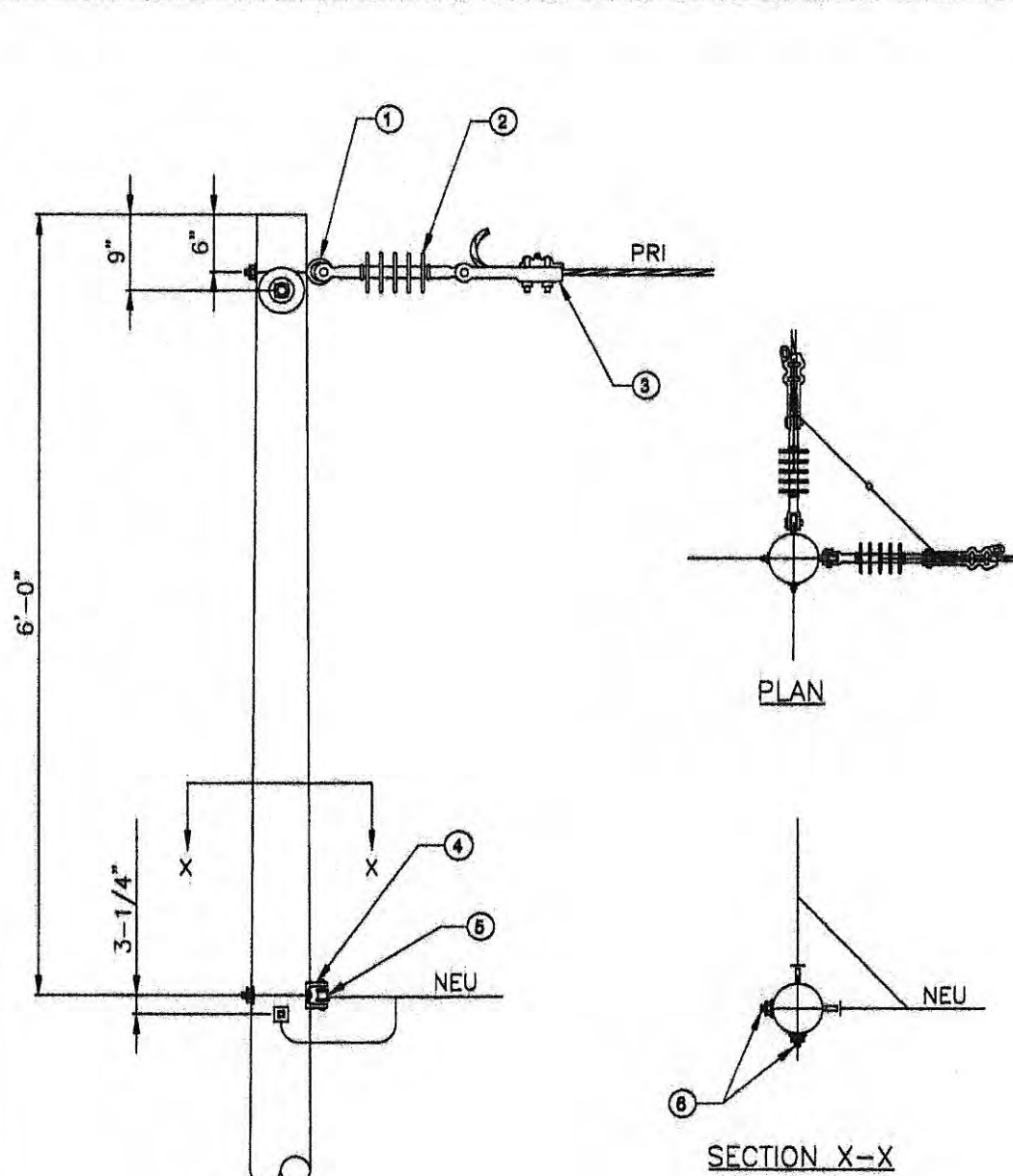
A1 1-PHASE VERTICAL CONSTRUCTION
0° ANGLE
N.T.S.



CONSTRUCTION NOTES:
1. USE FLAT WASHERS ON FLAT SURFACES AND CURVED WASHERS ON CURVED SURFACES.
2. USE TWO WIRE TIES, ONE FOR EACH INSULATOR.

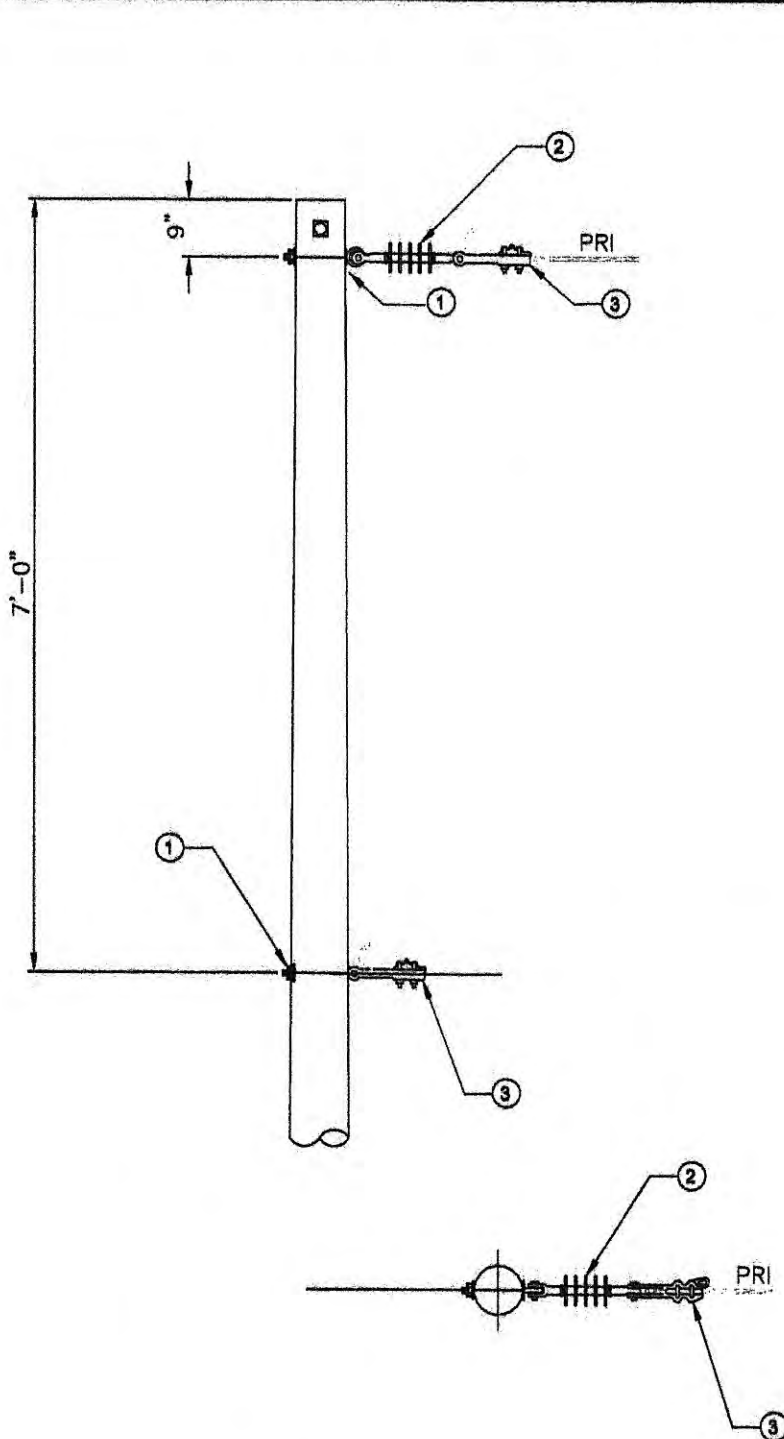
ID	QTY.	DESCRIPTION
1	2	PIN, STRAIGHT RIDGE
2	2	INSULATOR, POLE TOP
3	3	THRU BOLTS 5/8" - LENGTH AS NEEDED
4	1	CLEVIS, SECONDARY DE
5	1	INSULATOR, SECONDARY

A1-1 1-PHASE VERTICAL CONSTRUCTION (TANGENT)
N.T.S.



ID	QTY.	DESCRIPTION
1	2	EYE BOLT, 5/8" X 10"
2	2	INSULATOR, POLYMER SUSPENSION (25KV)
3	2	DEAD END SHOES
4	2	CLEVIS, SECONDARY DE
5	2	INSULATOR, SECONDARY DE WHITE
6	2	THRU BOLT, 5/8" X 10"

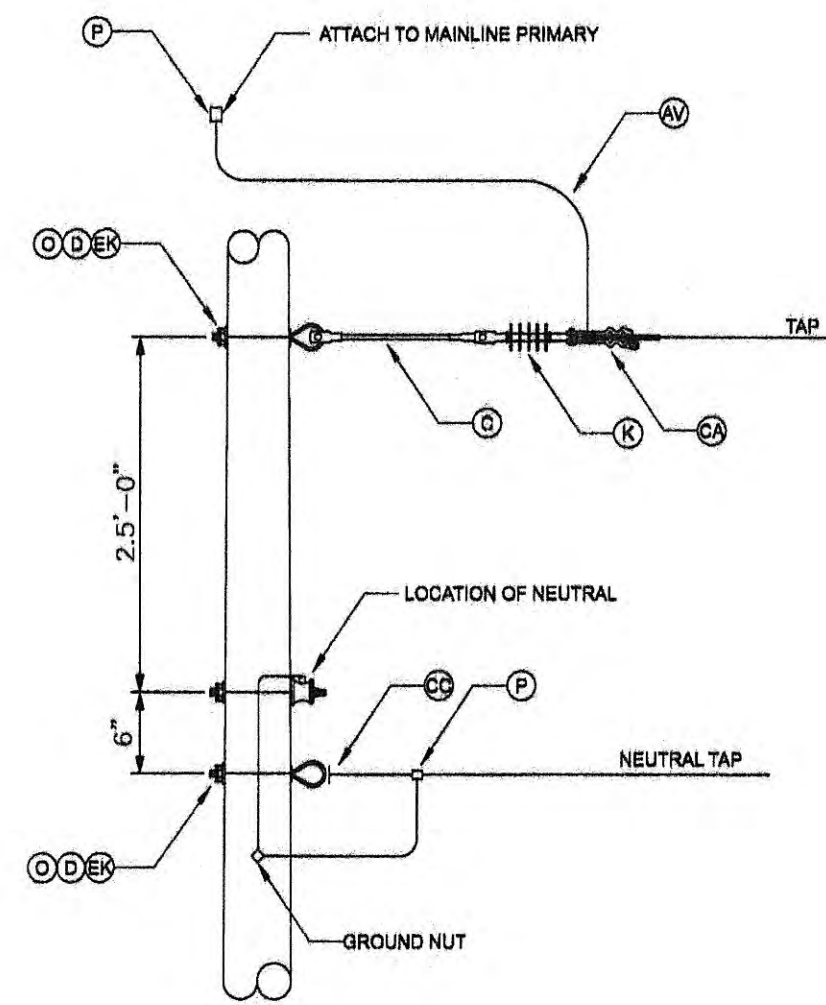
A4 1-PHASE VERTICAL CONSTRUCTION (60°-90°)
N.T.S.



CONSTRUCTION NOTES:
1. USE FLAT WASHERS ON FLAT SURFACES AND CURVED WASHERS ON CURVED SURFACES.

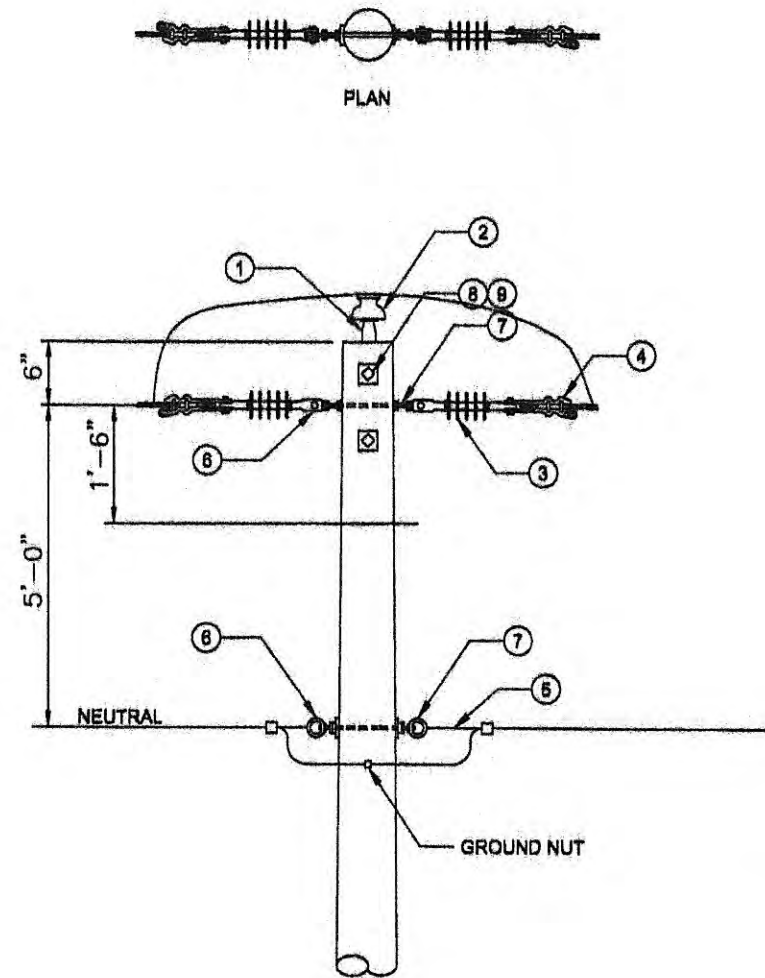
ID	QTY.	DESCRIPTION
1	2	EYE BOLTS 5/8" - LENGTH AS REQUIRED
2	1	INSULATOR, SUSPENSION
3	2	CLAMP, DE

A5 SINGLE DEADEND
N.T.S.



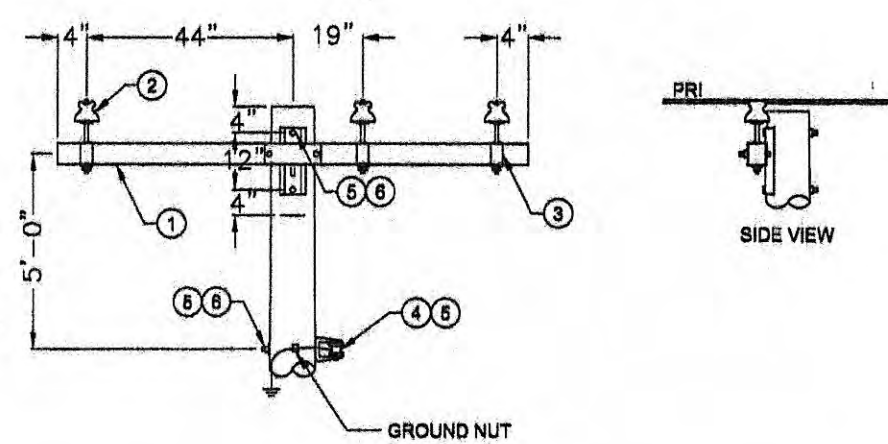
ID	QTY.	DESCRIPTION
1	1	FIBERGLASS EXTENSION, 24" MINIMUM
2	2	WASHER, SQUARE, 3" CURVED
3	2	INSULATOR, SUSPENSION, 15 KV
4	3	BOLT, EYE, 5/8" X REQ'D
5	1	NUT, EYE, 5/8"
6	1	DEADEND ASSEMBLY, PRIMARY
7	1	DEADEND ASSEMBLY, NEUTRAL
8	1	SHACKLE, ANCHOR

A5-2 SINGLE DEADEND
N.T.S.



ID	QTY.	DESCRIPTION
1	1	PIN, FIBERGLASS, STRAIGHT RIDGE
2	1	INSULATOR, SUSPENSION, 15KV
3	2	INSULATOR, SUSPENSION
4	2	CLAMP, DE, AS REQ'D
5	2	CLAMP, NEUTRAL DE
6	2	EYEBOLT, 5/8" X REQ'D
7	2	EYENUT, 5/8"
8	6	WASHER, 3", SQUARE CURVED
9	2	BOLT W/NUT, 5/8" X REQ'D
10	-	CONNECTORS, AS REQ'D
11	-	JUMPERS, AS REQ'D

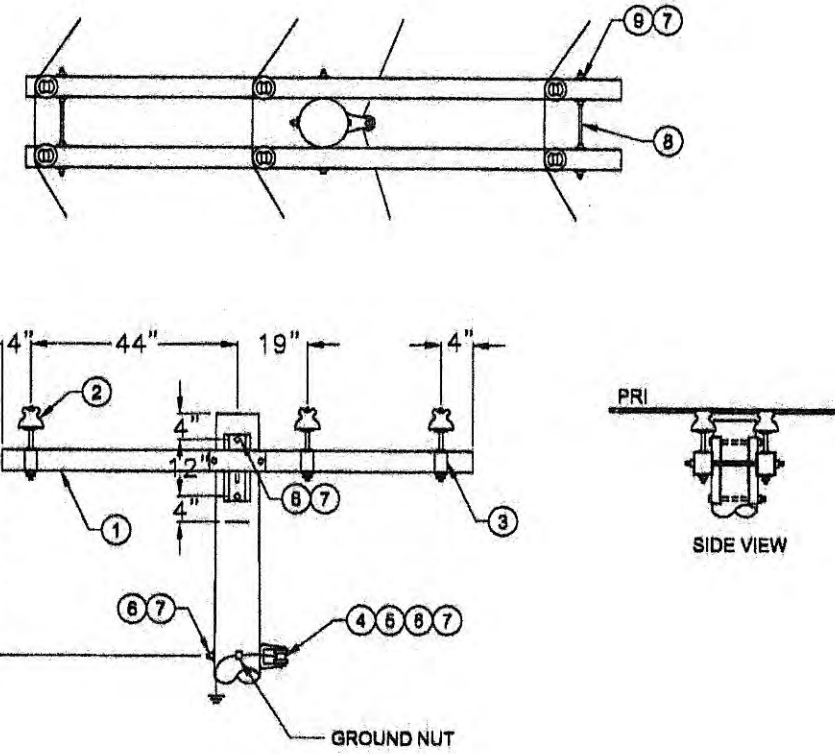
A6 DOUBLE DEADEND
N.T.S.



NOTES:
1. USE FLAT WASHERS ON FLAT SURFACES AND CURVED WASHERS ON CURVED SURFACES.

ID	QTY.	DESCRIPTION
1	1	CROSSARM, FIBERGLASS HEAVY DUTY TANGENT 8'-0"
2	3	INSULATOR, PIN TYPE, 15KV
3	3	PIN, SADDLE TYPE FOR FIBERGLASS ARMS
4	1	CLEVIS, SECONDARY
5	1	INSULATOR, SECONDARY
6	3	BOLT W/NUT, 5/8" X REQ'D
7	3	WASHER, 3" SQUARE CURVED
8	-	CONNECTORS, AS REQ'D
9	-	JUMPERS, AS REQ'D

C1 SINGLE SUPPORT ON CROSSARM (TANGENT)
N.T.S.



NOTES:
1. USE FLAT WASHERS ON FLAT SURFACES AND CURVED WASHERS ON CURVED SURFACES.
2. USE 5/8" BOLT ON ITEM #4 INSTEAD OF LEG SCREW ON ANGLE BRACES.

ID	QTY.	DESCRIPTION
1	2	CROSSARM, FIBERGLASS HEAVY DUTY TANGENT 8'-0"
2	6	INSULATOR, SUSPENSION 15KV
3	6	PIN, SADDLE TYPE FOR FIBERGLASS ARMS
4	1	CLEVIS, SECONDARY
5	1	INSULATOR, SECONDARY
6	3	BOLT W/NUT, 5/8" X REQ'D
7	13	WASHER, 3", SQUARE CURVED
8	2	BOLT, DA, 5/8" X REQ'D
9	8	NUT, LOCK, 5/8"
10	-	CONNECTORS, AS REQ'D
11	-	JUMPER, AS REQ'D

C2 DOUBLE SUPPORT ON CROSSARM
N.T.S.

NOTES:
1. ALL INSULATORS TO BE 15KV POLYMER UNLESS SPECIFIED OTHERWISE.
2. ALL CROSSARMS TO BE BRACELESS FIBERGLASS CONSTRUCTION UNLESS SPECIFIED OTHERWISE.



HUB

Harriman Utility Board

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JOB NUMBER: 81128
DESIGNED: CED
DRAWN: RKW
CHECKED: JNC

SCALE
N.T.S.
DATE
03.18.2013

ASSEMBLY DETAILS

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	US-9
		73035-3209-14	

ROANE CO.

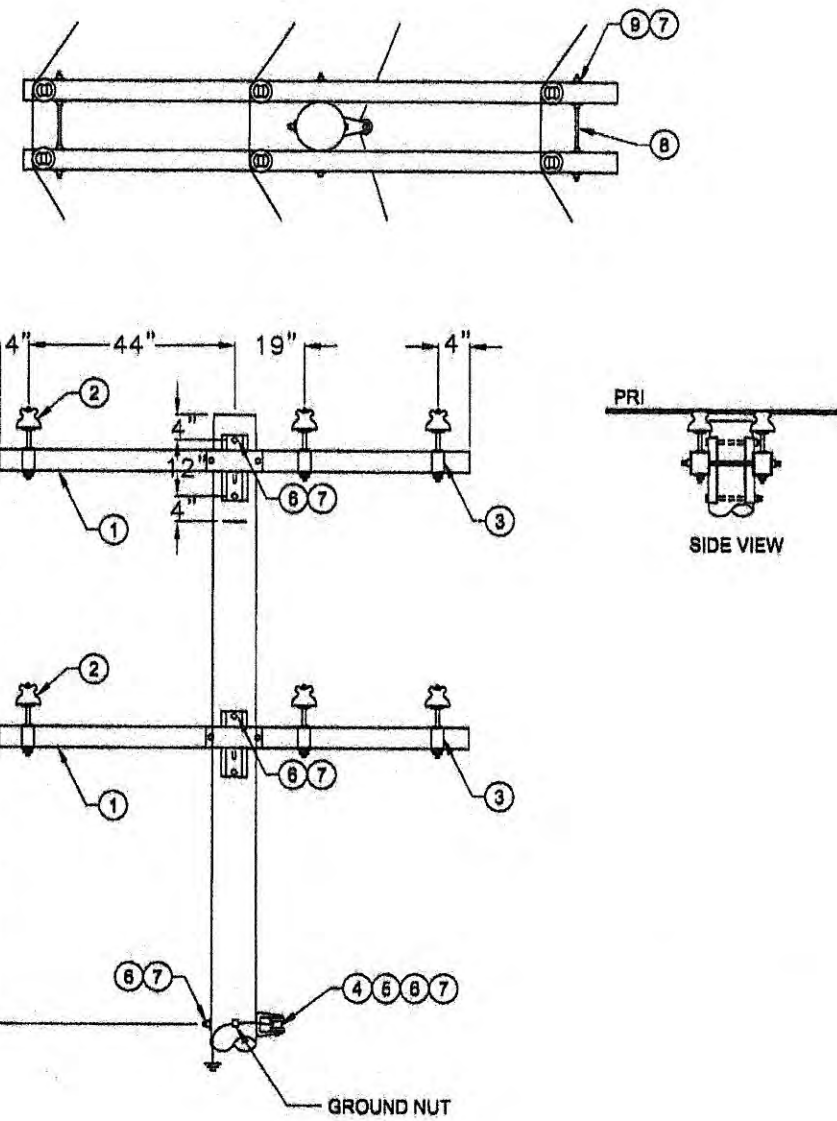
REV. 3-18-2013: UPDATED CONSTRUCTION YEAR.

REV. 4-22-13: REMOVED 04 FROM SHEET NUMBERING.

NOTES:

1. ALL INSULATORS TO BE 15KV POLYMER UNLESS SPECIFIED OTHERWISE.

2. ALL CROSSARMS TO BE BRACELESS FIBERGLASS CONSTRUCTION UNLESS SPECIFIED OTHERWISE.



NOTES:

1. USE FLAT WASHERS ON FLAT SURFACES AND CURVED WASHERS ON CURVED SURFACES.

2. USE 5/8" BOLT ON ITEM #4 INSTEAD OF LEG SCREW ON ANGLE BRACES.

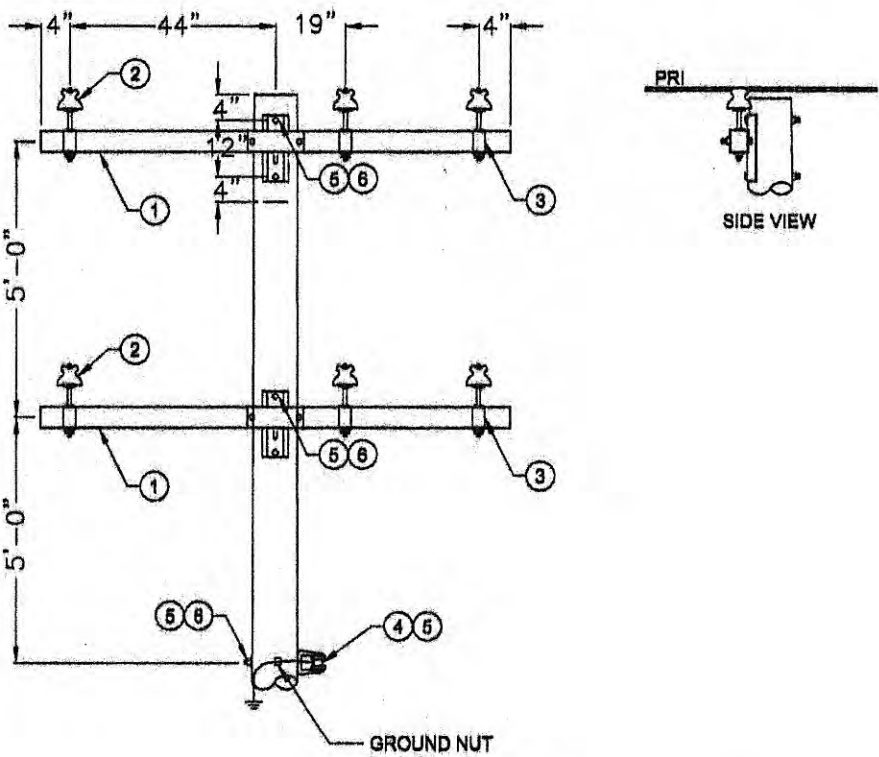
ID	QTY.	DESCRIPTION
1	4	CROSSARM, FIBERGLASS HEAVY DUTY TANGENT 8'-0"
2	12	INSULATOR, PIN TYPE 15KV
3	12	PIN, SADDLE TYPE FOR FIBERGLASS ARMS
4	1	CLEVIS, SECONDARY
5	1	INSULATOR, SECONDARY
6	5	BOLT W/NUT, 5/8" X REQ'D
7	21	WASHER, 3", SQUARE CURVED
8	4	BOLT, DA, 5/8" X REQ'D
9	16	NUT, LOCK, 5/8"
10	-	CONNECTORS, AS REQ'D
11	-	JUMPER, AS REQ'D

NOTES:

1. ULTIMATE TENSION STRENGTH OF FIBERGLASS LINK IS 21,000 LBS.

2. INS LINK QUANTITIES ARE IN ADDITION TO INS LINKS IN CLUDED IN GUY ASSEMBLIES.

ID	QTY.	DESCRIPTION
1	1	GUY, FIBERGLASS LINK

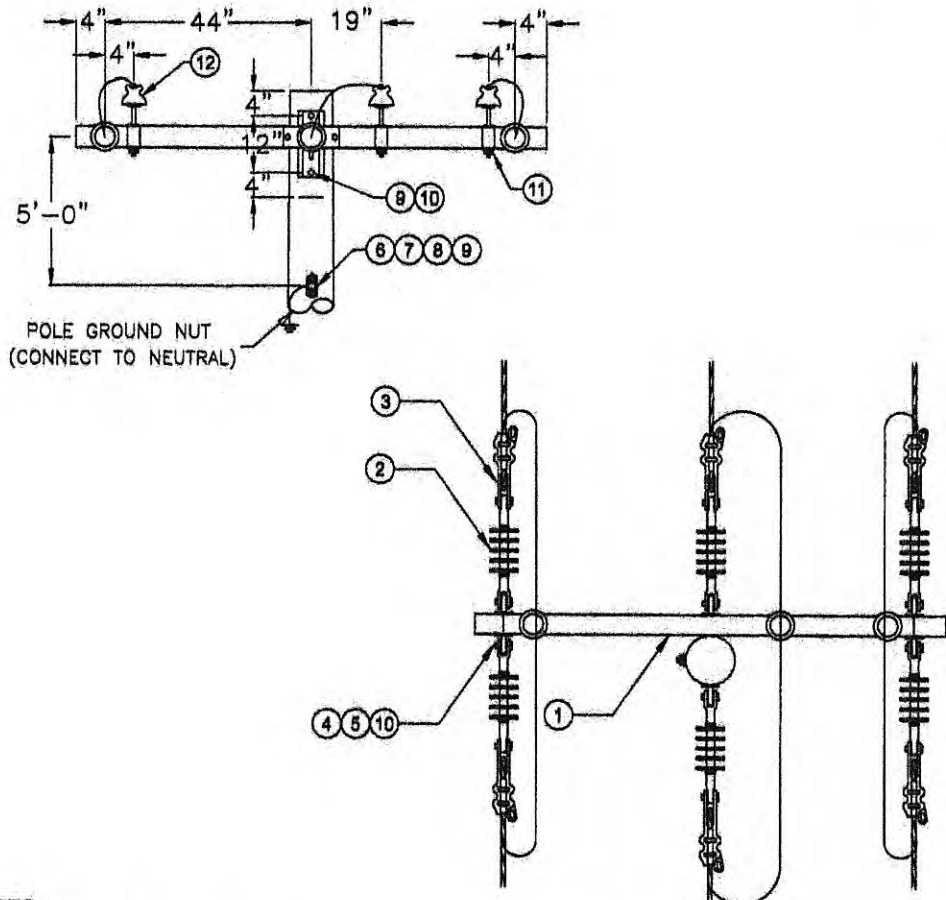


NOTES:

1. USE FLAT WASHERS ON FLAT SURFACES AND CURVED WASHERS ON CURVED SURFACES.

ID	QTY.	DESCRIPTION
1	2	CROSSARM, FIBERGLASS HEAVY DUTY TANGENT 8'-0"
2	6	INSULATOR, PIN TYPE, 15KV
3	6	PIN, SADDLE TYPE FOR FIBERGLASS ARMS
4	1	CLEVIS, SECONDARY
5	1	INSULATOR, SECONDARY
6	5	BOLT W/NUT, 5/8" X REQ'D
7	5	WASHER, 3", SQUARE CURVED
8	-	CONNECTORS, AS REQ'D
9	-	JUMPERS, AS REQ'D

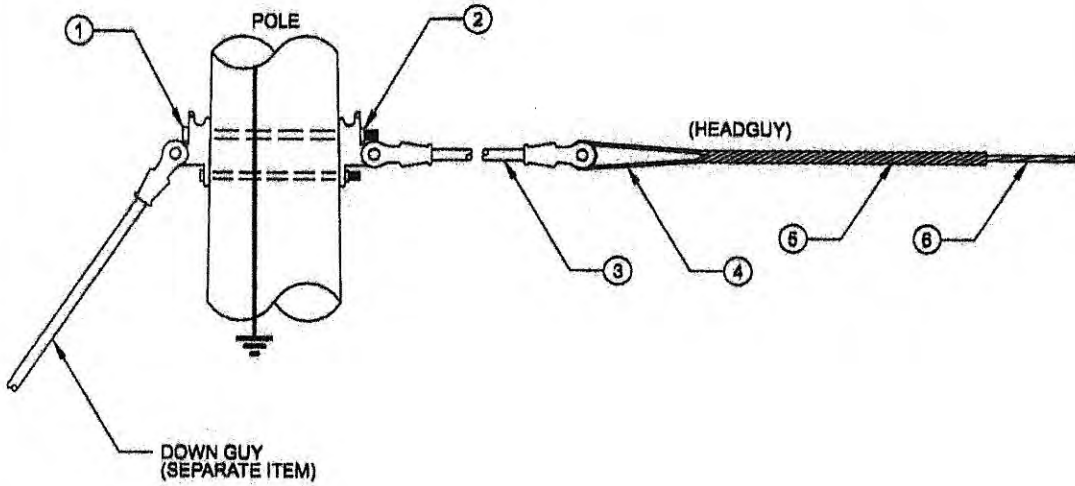
ID	QTY.	DESCRIPTION
1	1	DOULBE HELIX HUB
2	1	TWIN EYE ADAPTER
3	1	EXTENSION ROD 3-1/2' (INCLUDED IN BASE UNIT)
4	2	ADD'L EXTENSION RODS (3-1/3', 5', & 7' AS REQ'D)



NOTES:

1. MAXIMUM LINE ANGLE MAY BE INCREASED TO 15° BY INSTALLING ANCHOR SHACKLES TO (HORIZONTAL) EYE NUT AND INSTALLING SIDE GUYS AS REQ'D.

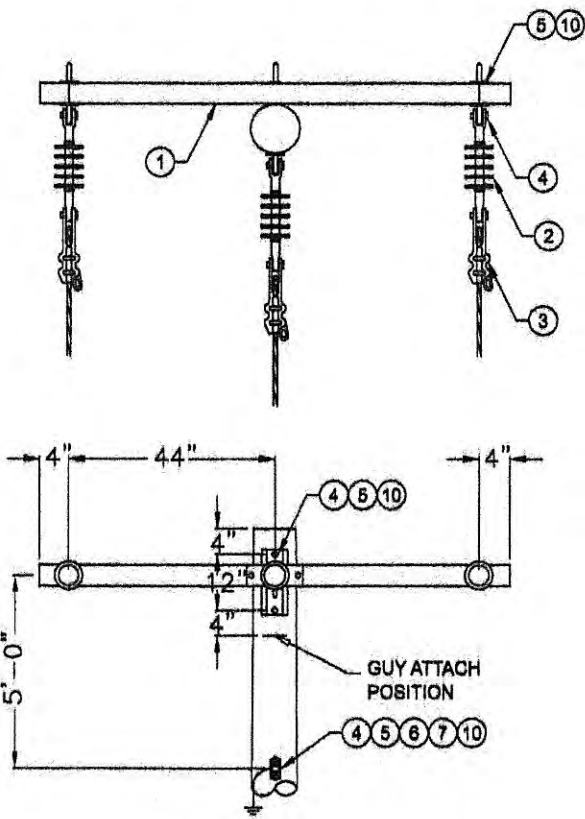
ID	QTY.	DESCRIPTION
1	1	CROSSARM, FIBERGLASS HEAVY DUTY DEADEND 8'-0"
2	6	INSULATOR, SUSPENSION 15KV
3	6	CLAMP, DE, SIZE AS REQ'D
4	4	EYEBOLT, 5/8" X REQ'D
5	3	EYENUT, 5/8"
6	1	CLEVIS, SECONDARY
7	1	INSULATOR, SECONDARY
8	1	CLAMP, NEUTRAL DE
9	3	BOLT W/NUT, 5/8" X REQ'D
10	4	WASHER, 3", SQUARE CURVED
11	3	PIN, SADDLE TYPE FOR FIBERGLASS ARMS
12	3	INSULATOR, PIN TYPE, 15KV
13	-	CONNECTORS, AS REQ'D
14	-	JUMPERS, AS REQ'D



NOTES:

1. VIEW TYPICAL FOR BOTH ENDS UNLESS SPECIFIED OTHERWISE.

ID	QTY.	DESCRIPTION
1	4	MACHINE BOLT (SIZE AS REQ'D)
2	2	POLE EYE PLATE (#21,000 MIN.)
3	2	GUY STRAIN INSULATOR (#21,000 MIN.)
4	2	GUY ROLLER (SIZE AS REQ'D)
5	2	PREFORM DEADEND
6	-	GUY WIRE (AS REQ'D)



NOTES:

1. USE FLAT WASHERS ON FLAT SURFACES AND CURVED WASHERS ON CURVED SURFACES.

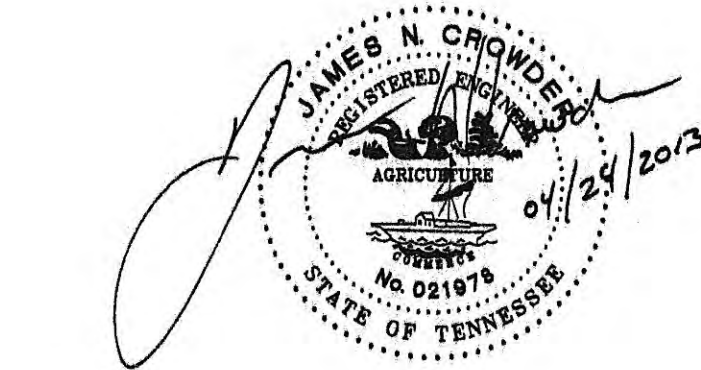
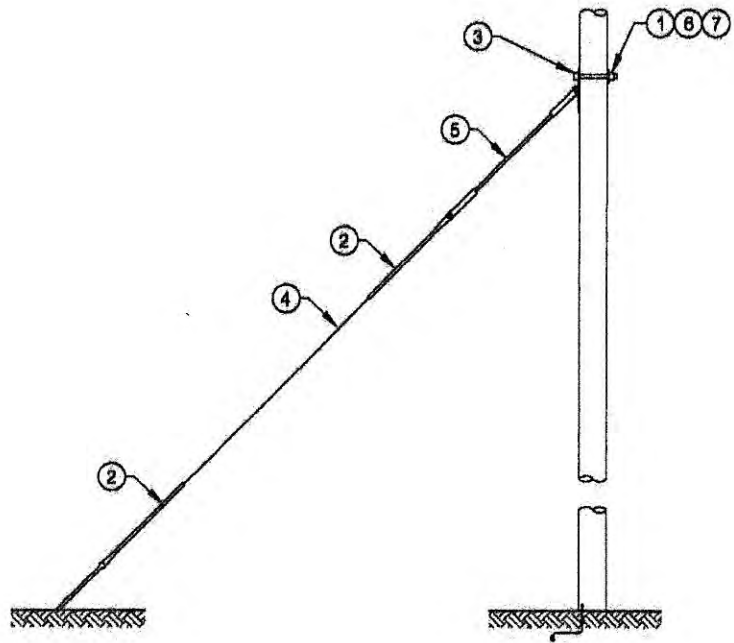
ID	QTY.	DESCRIPTION
1	1	CROSSARM, FIBERGLASS HEAVY DUTY DEADEND 8'-0"
2	3	INSULATOR, SUSPENSION 15KV
3	3	CLAMP, DE, SIZE AS REQ'D
4	2	EYEBOLT, 5/8" X REQ'D
5	4	EYENUT, 5/8"
6	1	CLEVIS, SECONDARY
7	1	INSULATOR, SECONDARY
8	1	CLAMP, NEUTRAL DE
9	3	BOLT W/NUT, 5/8" X REQ'D
10	4	WASHER, 3", SQUARE CURVED
11	-	CONNECTORS, AS REQ'D
12	-	JUMPERS, AS REQ'D

ID	QTY.	DESCRIPTION
1	1	BOLT, 5/8" MACHINE X REQ'D LENGTH
2	2	PREFORMED DEADEND (2/8")
3	1	GUY ATTACHMENT (FOR GUY STRAIN INSULATOR)
4	75	GUY, 3/8" STRAND
5	1	GUY, FIBERGLASS LINK
6	2	NUT, 3/4" LOCK
7	1	WASHER, 4" X 13/16" SQUARE FLAT
8	2	GUY MARKER, 8", YELLOW

NOTES:

1. SPECIFY ONE UNIT FOR EACH GUY USED ON A MULTIPLE GUY STRUCTURE.

2. POLE GROUNDING IS SEPARATE ITEM.



HUB

Harriman Utility Board

JOB NUMBER: 81128

DESIGNED: CED

DRAWN: RKW

CHECKED: JNC

Allen&Hoshall

engineering since 1915

8331 E. WALKER SPRINGS LANE, SUITE 102

KNOXVILLE, TENNESSEE 37923

(865) 693-7881 (865) 693-7824

SCALE

N.T.S.

DATE

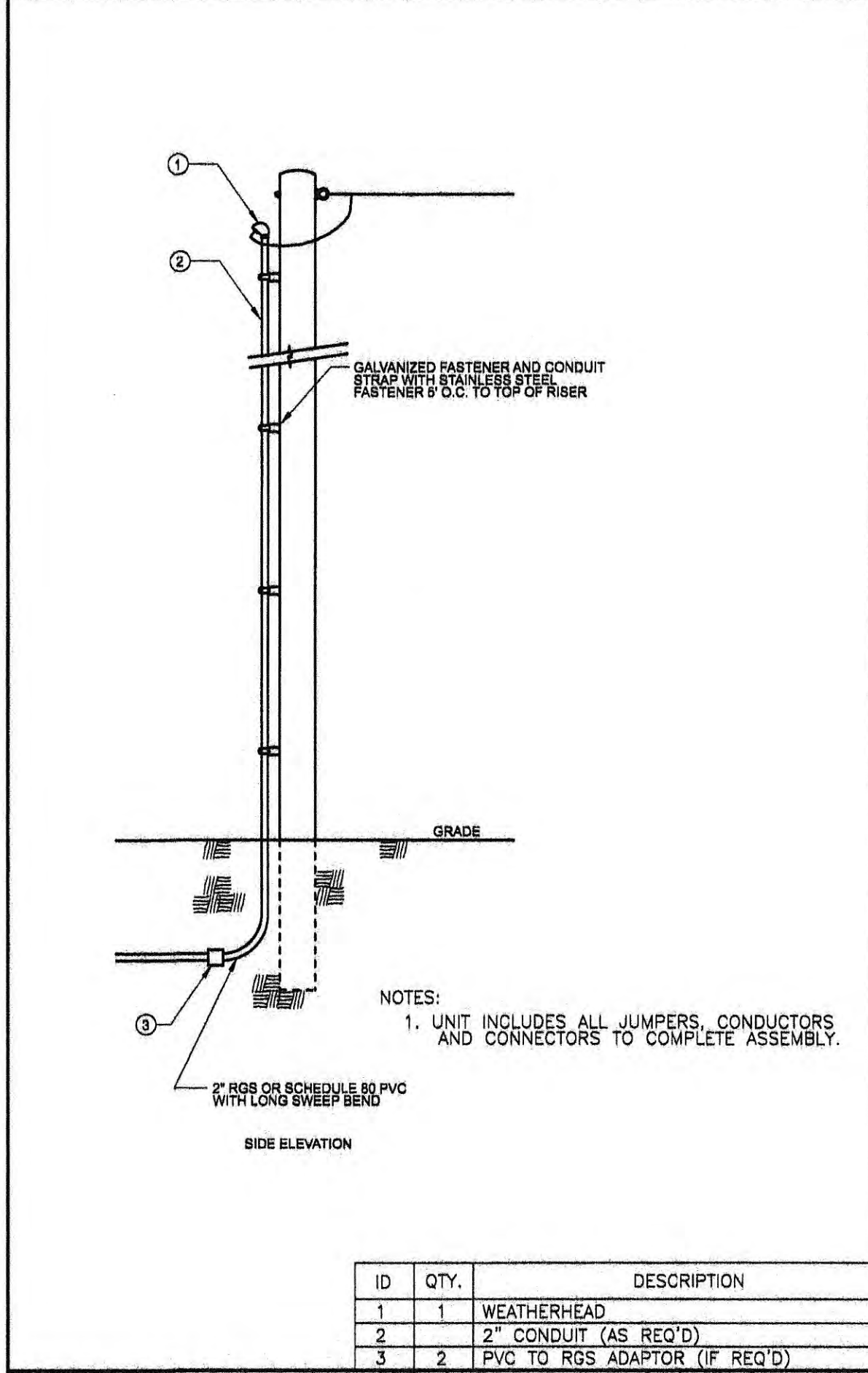
03.18.2013

ASSEMBLY DETAILS

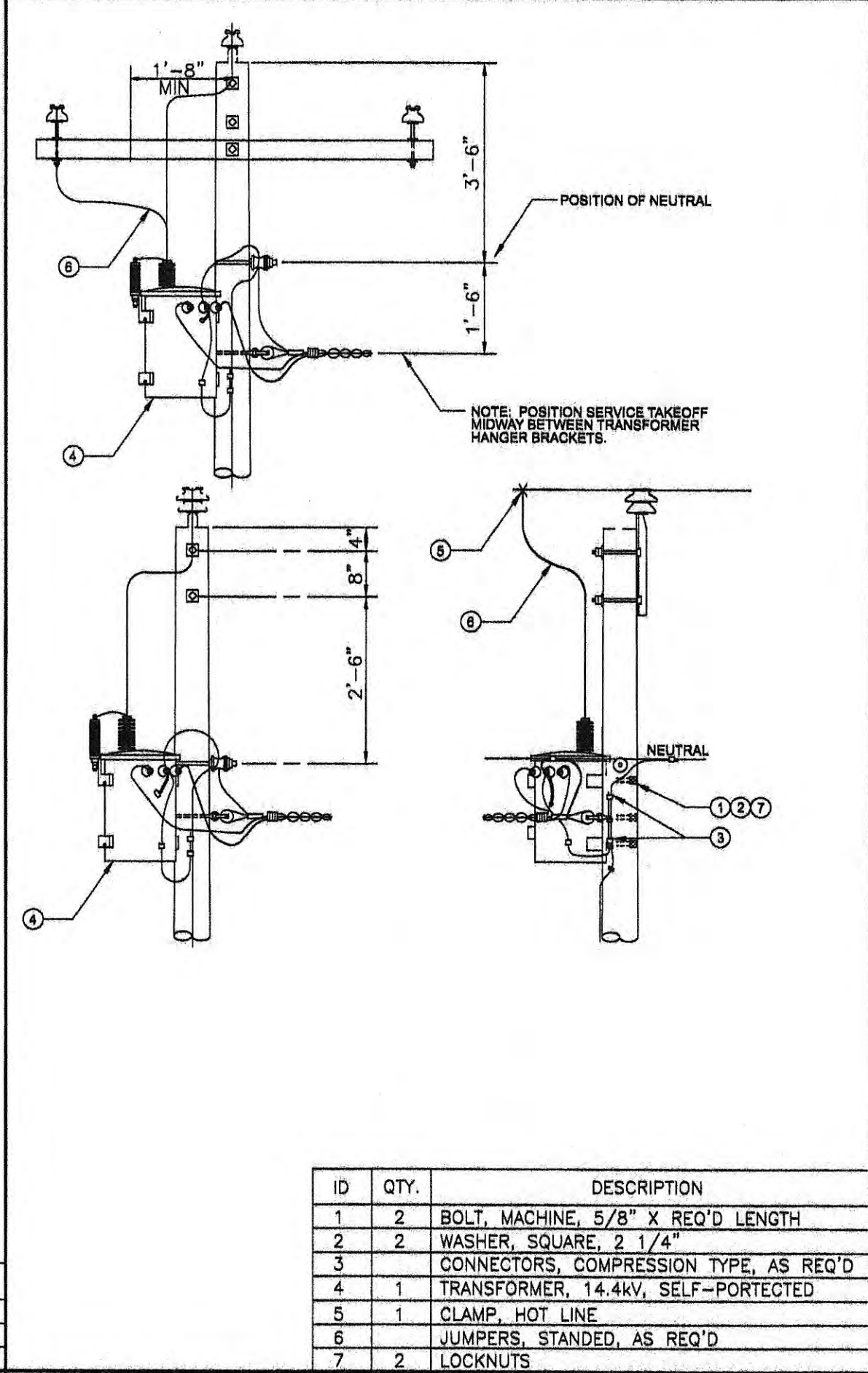
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U5-10
		73035-3209-14	

ROANE CO.
 REV. 3-18-2013: UPDATED CONSTRUCTION YEAR.
 REV. 4-22-13: REMOVED 04 FROM SHEET NUMBERING.

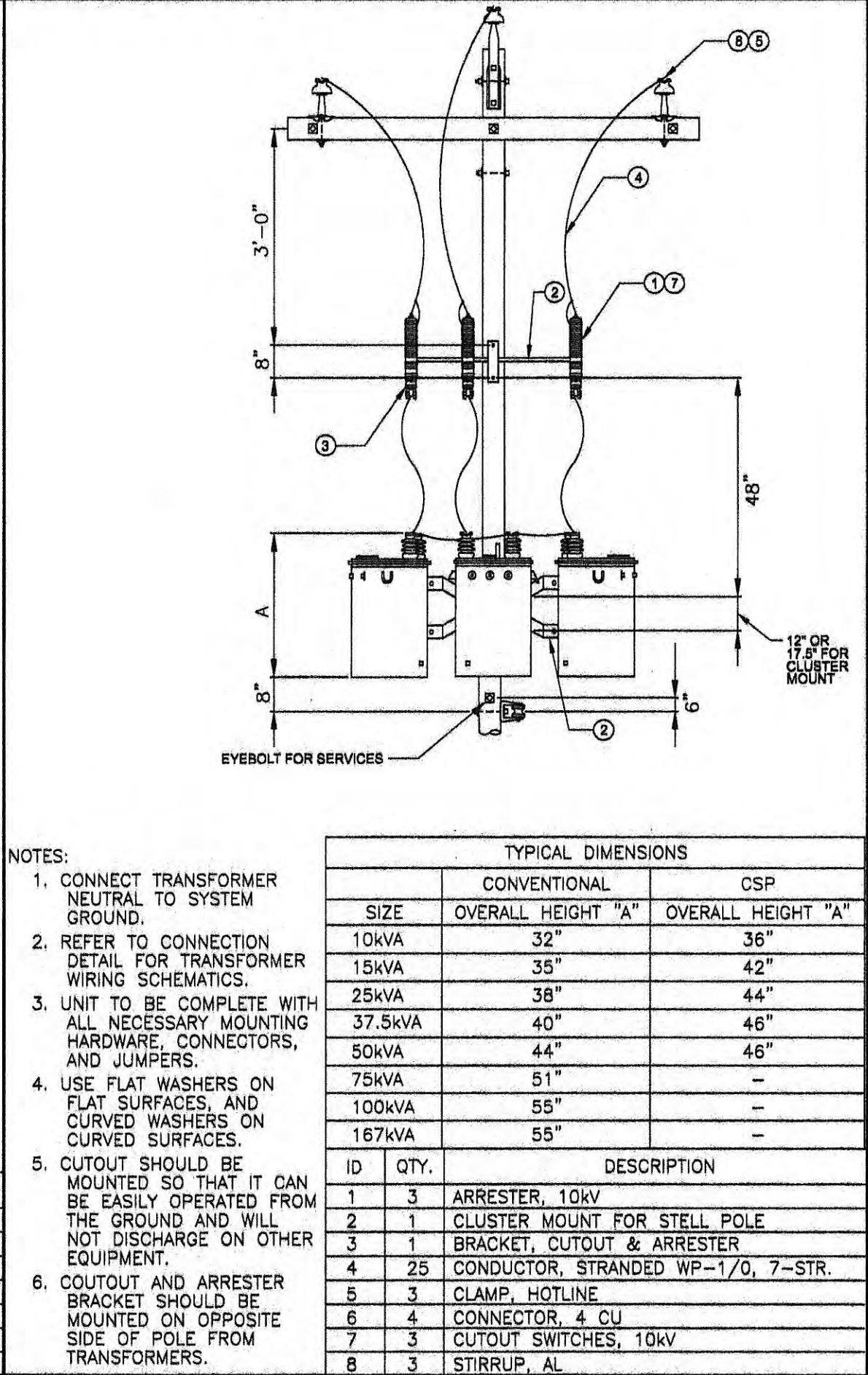
NOTES:
 1. ALL INSULATORS TO BE 15KV POLYMER UNLESS SPECIFIED OTHERWISE.
 2. ALL CROSSARMS TO BE BRACELESS FIBERGLASS CONSTRUCTION UNLESS SPECIFIED OTHERWISE.



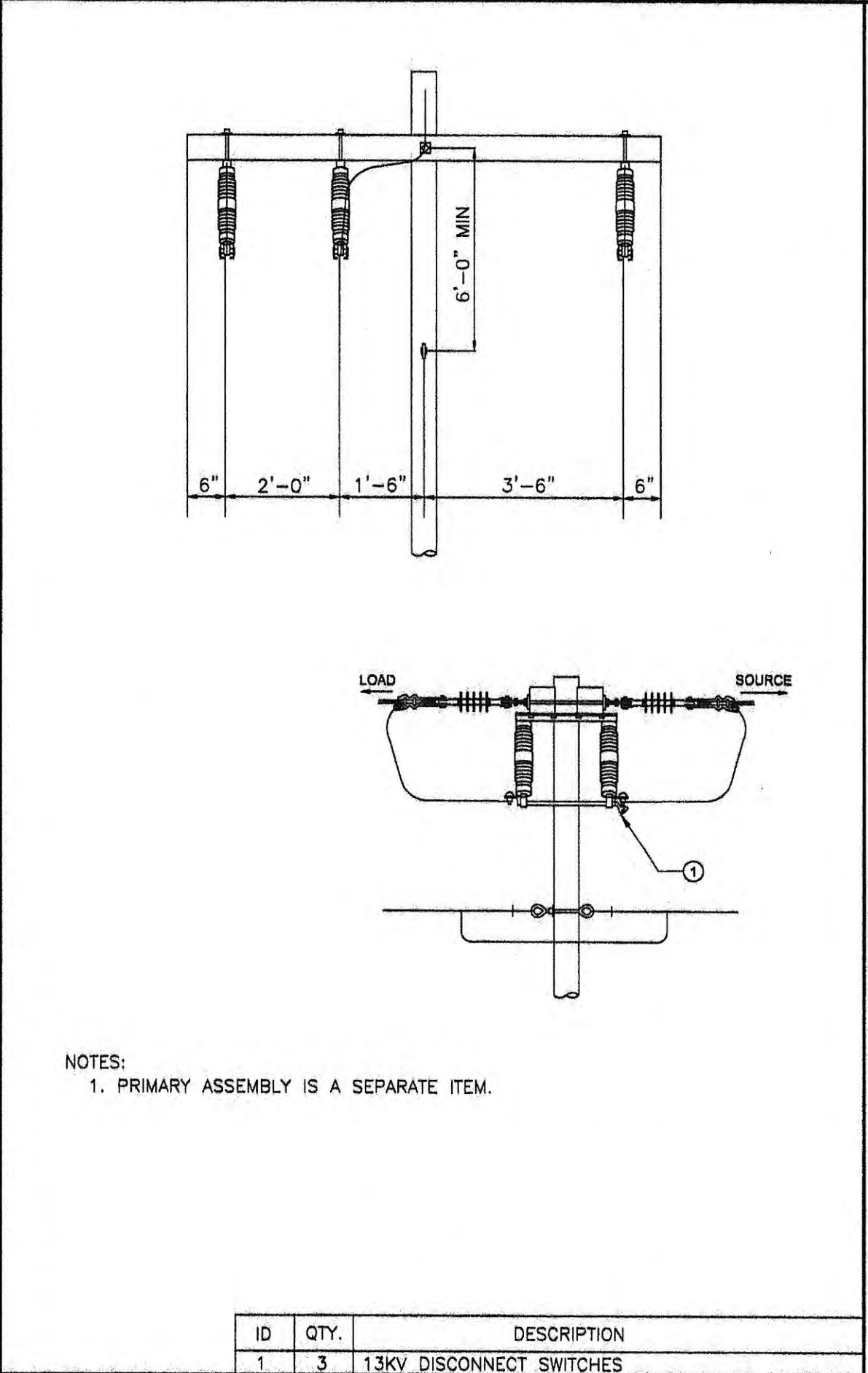
SVC RISER UNDERGROUND SECONDARY SERVICE RISER POLE
 N.T.S.



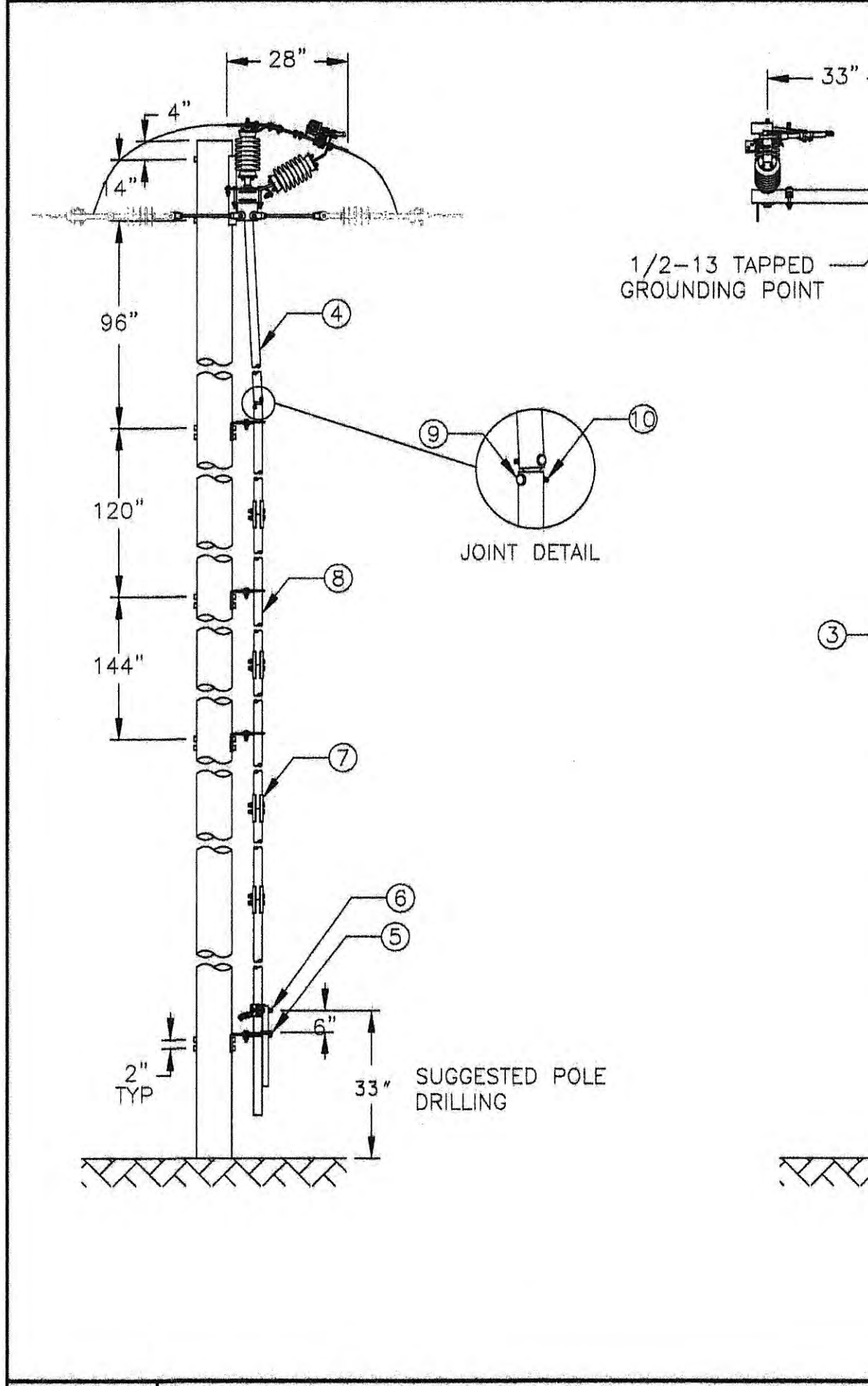
1TR SINGLE PHASE POLE MOUNTED TRANSFORMER
 N.T.S.



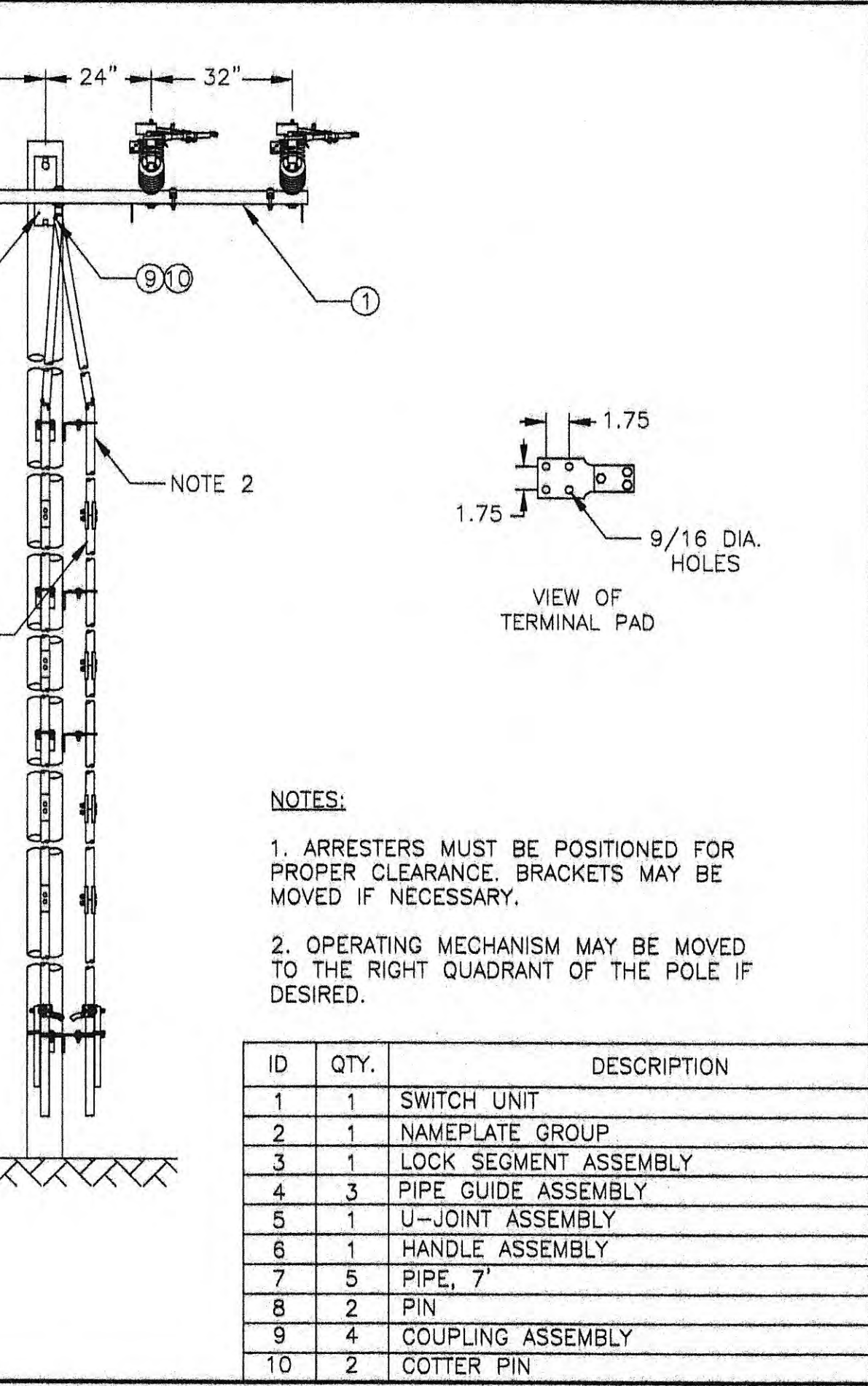
3TR THREE PHASE POLE MOUNTED TRANSFORMER
 N.T.S.



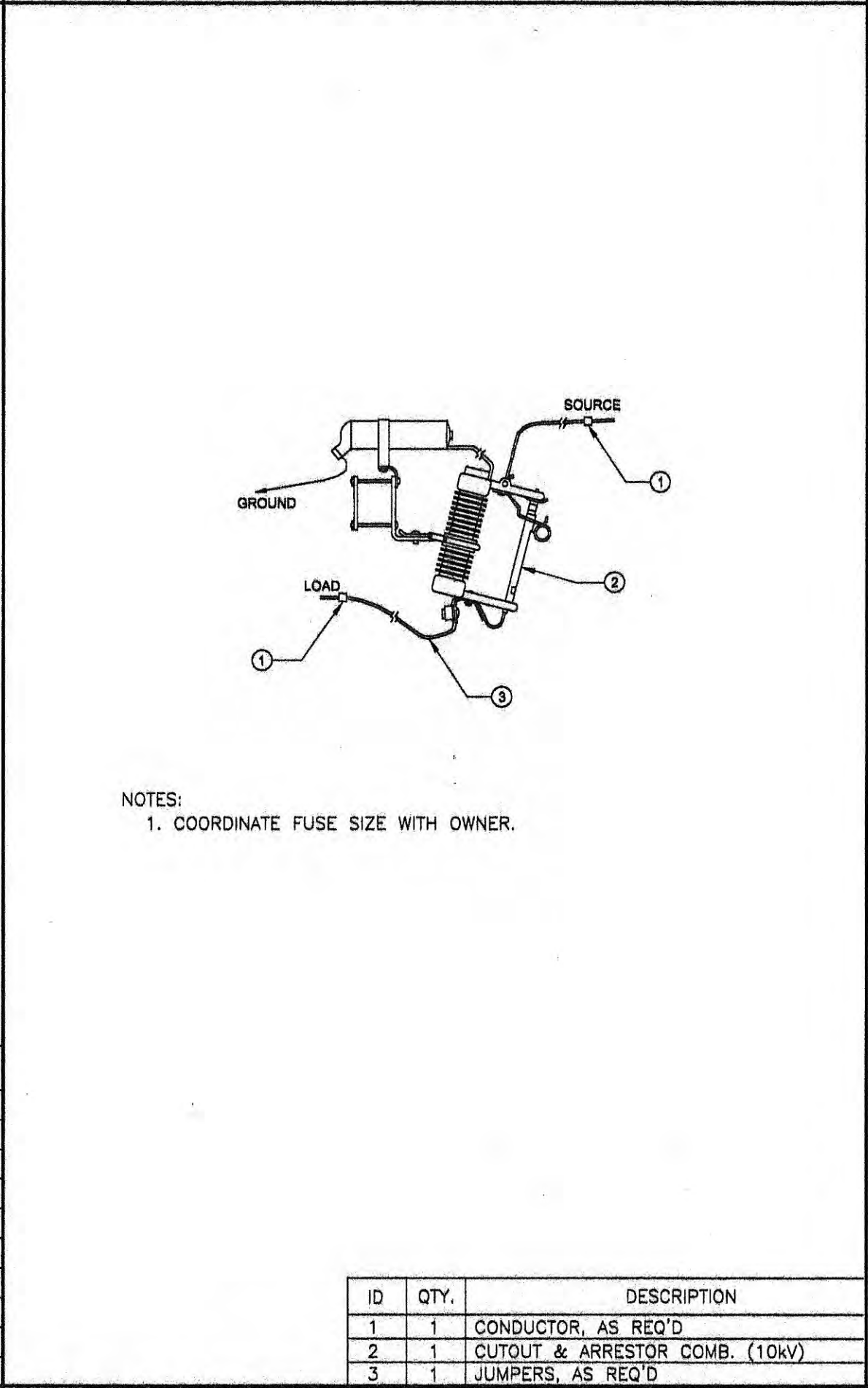
SW-DISC CUTOUT KNIFE SWITCH, SNGL LOADBREAK 15KV
 N.T.S.



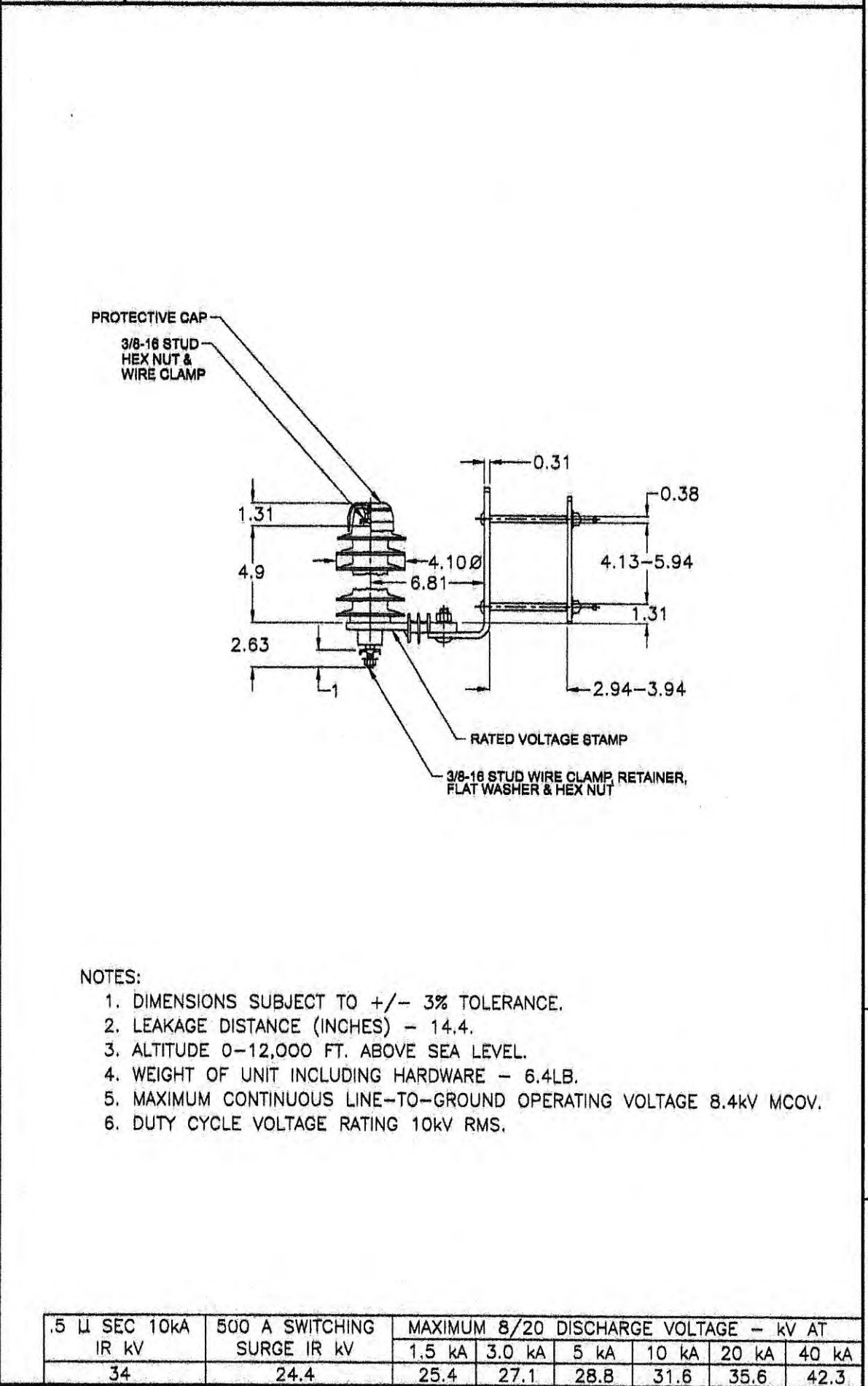
SW-GANG GOAB SWITCH 15KV
 N.T.S.



1CO FUSE CUTOUT XARM MOUNT 15KV
 N.T.S.



LA LIGHTING ARRESTER ARM MOUNTED 9KV
 N.T.S.



LA LIGHTING ARRESTER ARM MOUNTED 9KV
 N.T.S.



JOB NUMBER: 81128
 DESIGNED: CED
 DRAWN: RKW
 CHECKED: JNC

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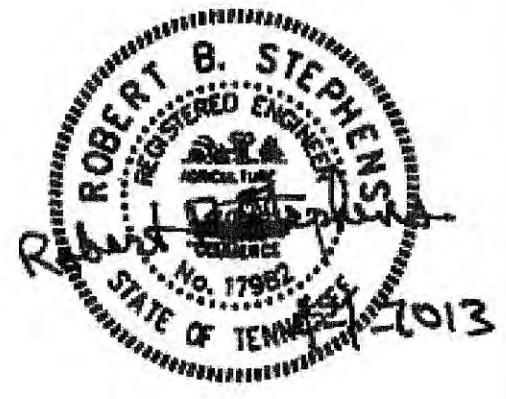
SCALE
 N.T.S.

DATE
 03.18.2013

ASSEMBLY DETAILS

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29 (58)	U6-4

S.R. 29
73035-3209-14
PIN NO. 103779.00
ROANE



COORDINATE VALUES ARE NAD/83(1995)
AND ARE DATUM ADJUSTED BY THE
FACTOR 1.0001, & TIED TO THE TGRN.

BWSC
BARGE WAGGONER SUMNER & CANNON, INC.
1033 Sherrill Blvd., Suite 300, Knoxville, Tennessee 37932
PHONE: (865) 637-2800 FAX: (865) 637-8554
BWSC PROJECT NO. 32119-22

AT&T
TENNESSEE
**UTILITY
RELOCATION**
STA. 35+00 TO STA. 48+00
SCALE: 1"=50'

S.R. 29 ROANE
73035-3209-14
PIN NO. 103779.00

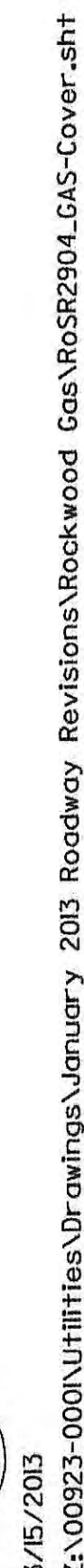
S.R. 29 ROANE
73035-3209-14
PIN NO. 103779.00

4/1/2013
F:\32\32



ROANE CO.

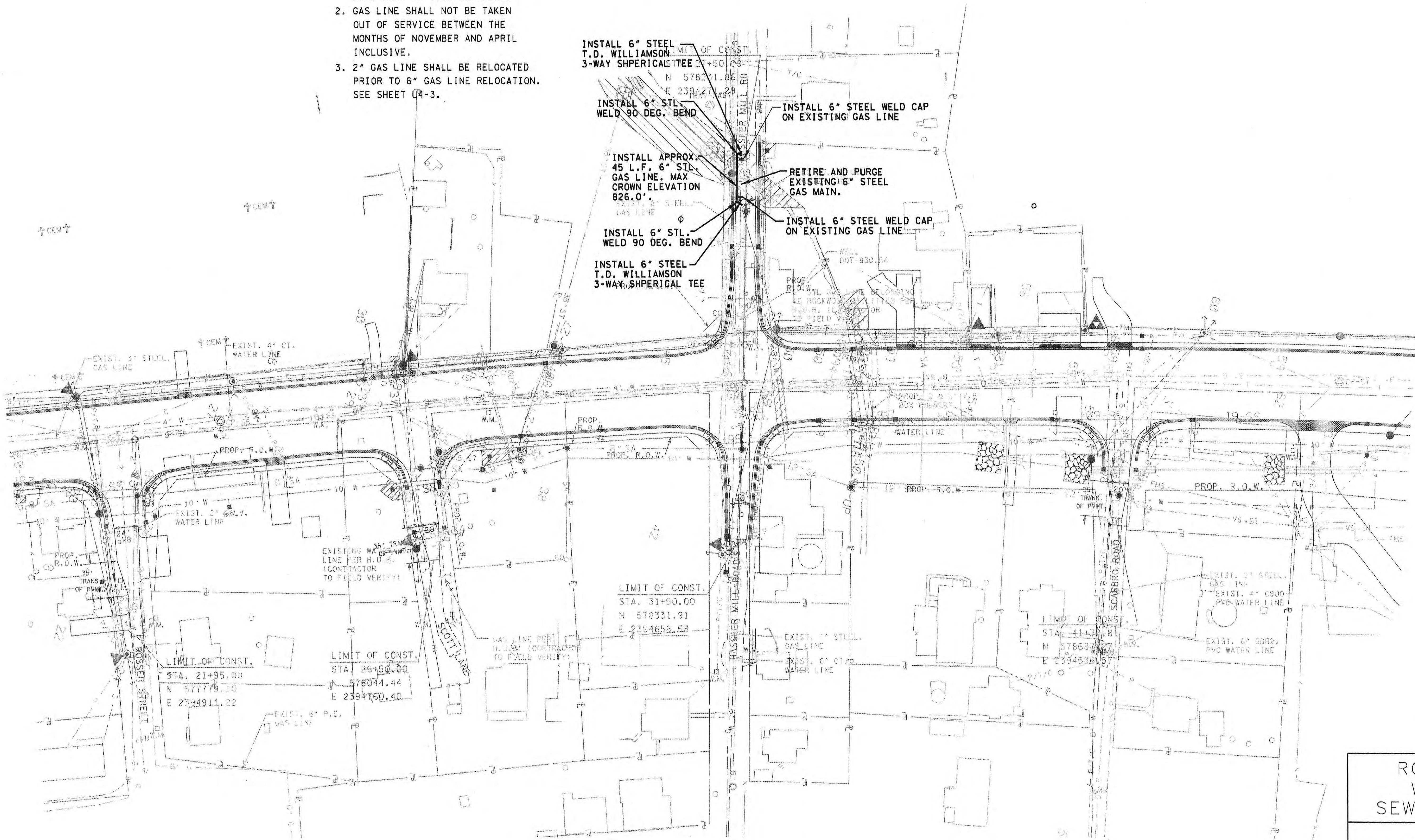
TYPICAL GAS DETAILS



TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U7-2
		73035-3209-14	

ROANE CO.

- NOTE:
- CONTRACTOR MUST MEET ALL NECESSARY REQUIREMENTS OF CFR 49 PART 192, SUBPART E AND N RELATED TO NATURAL GAS WORK, AND MUST MEET OR EXCEED ROCKWOOD'S OPERATOR QUALIFICATION (OO) PROGRAM. (SEE SPECIFICATION 33 51 13.20) TO PERFORM THE GAS LINE WORK IN THIS CONTRACT.
 - GAS LINE SHALL NOT BE TAKEN OUT OF SERVICE BETWEEN THE MONTHS OF NOVEMBER AND APRIL INCLUSIVE.
 - 2" GAS LINE SHALL BE RELOCATED PRIOR TO 6" GAS LINE RELOCATION. SEE SHEET U4-3.

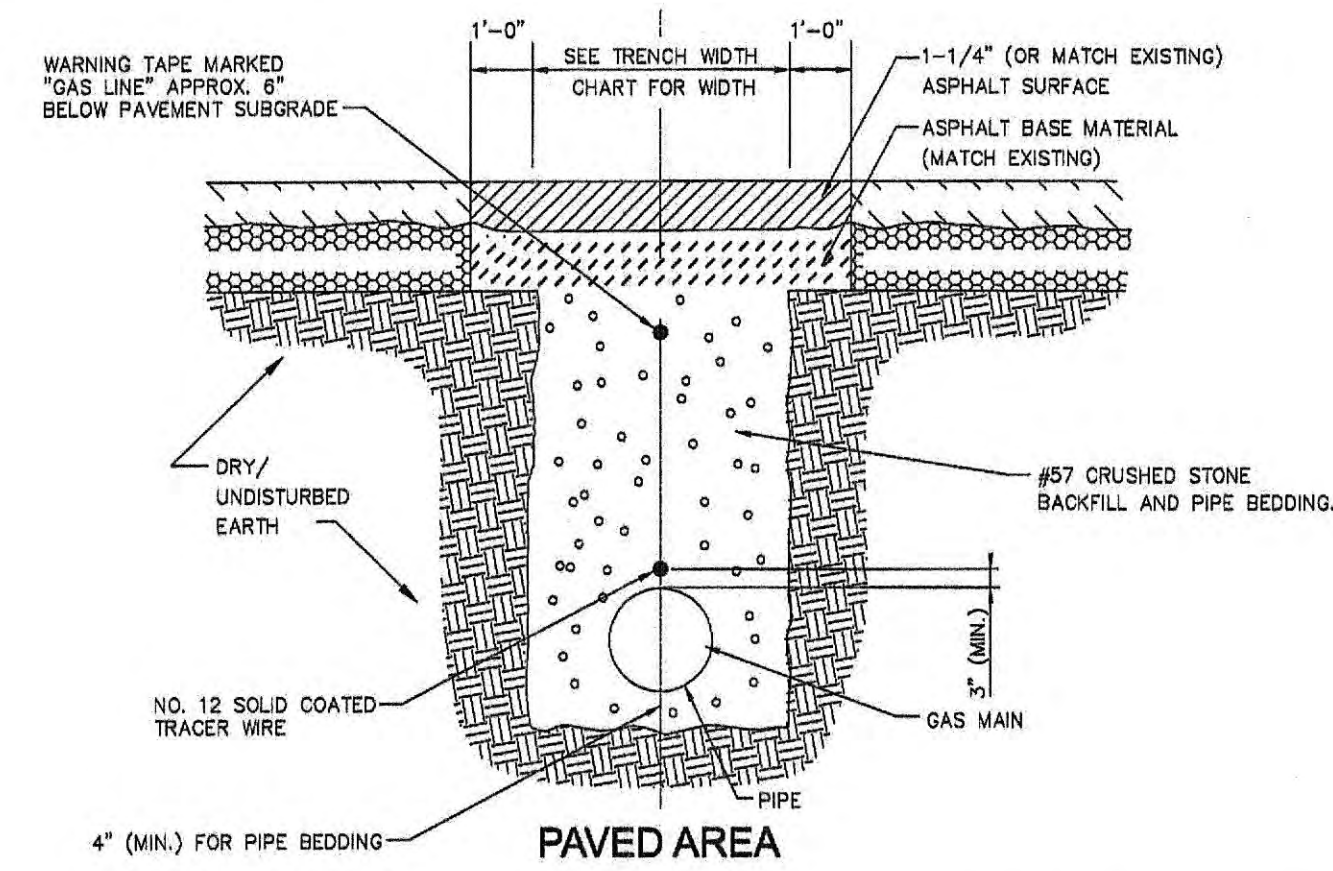


ROCKWOOD
WATER,
SEWER & GAS

GAS LINE
RELOCATION

STA. 21+00.00 TO STA. 35+00.00
SCALE: 1"=50'



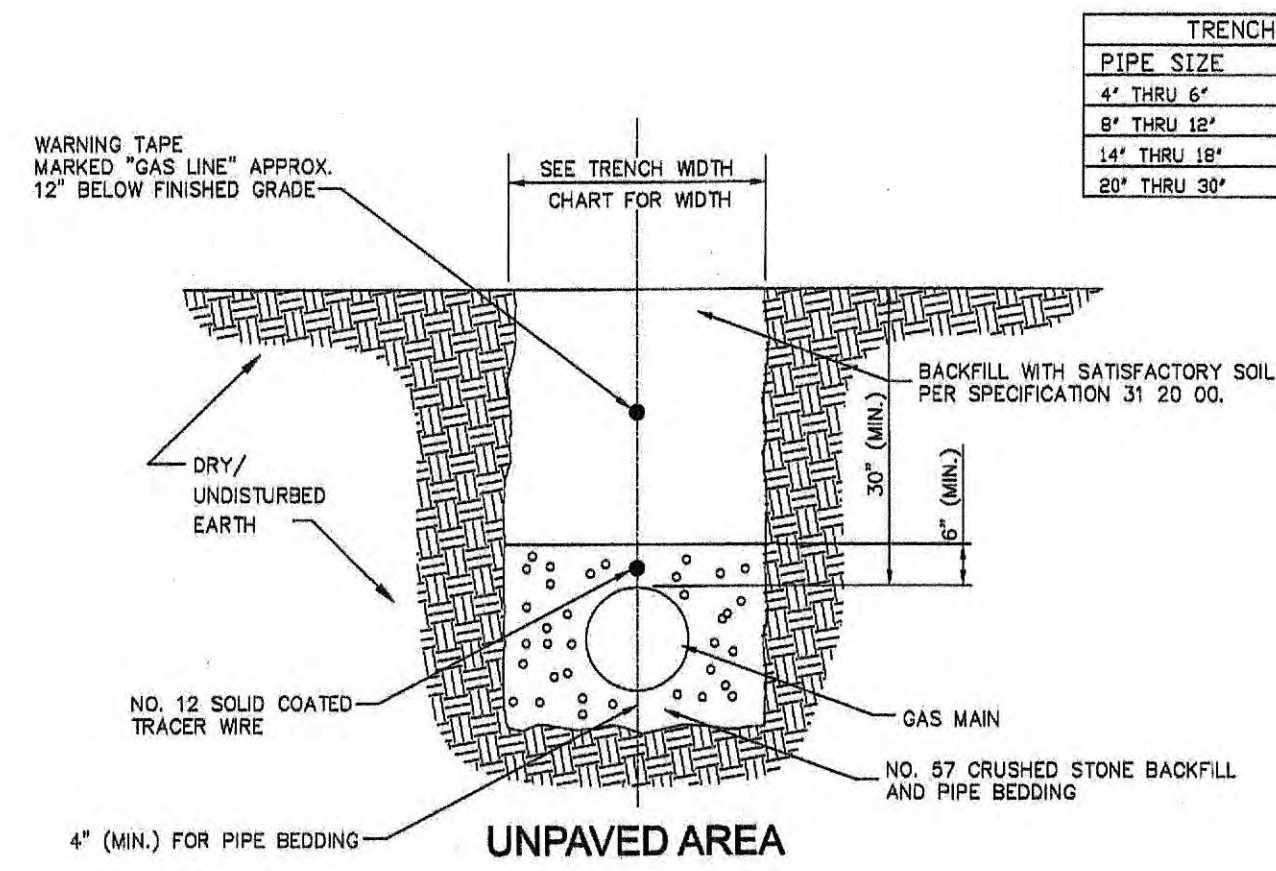


TYPICAL BACKFILL & BEDDING METHOD

NOTES:

1. EDGE TO BE SAWED WITH A CONCRETE SAW TO A NEAT SQUARED EDGE. BROOMED CLEAN OF DUST BEFORE TACK COAT IS APPLIED.
2. EDGES TO BE TACKED WITH EMULSIFIED ASPHALT TACK CRS-I OR CRS-II.
3. CUTTING AND REPAIRING EXISTING PAVEMENT CONCRETE OR GRAVEL SHALL BE IN ACCORDANCE WITH OWNER'S REQUIREMENTS.

TRENCH WIDTH	
PIPE SIZE	X
4" THRU 6"	30"
8" THRU 12"	36"
14" THRU 18"	42"
20" THRU 30"	54"



TYPICAL BACKFILL & BEDDING METHOD

TRENCH WIDTH	
PIPE SIZE	X
4" THRU 6"	30"
8" THRU 12"	36"
14" THRU 18"	42"
20" THRU 30"	54"

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2013	STP-29(58)	U7-3
		73035-3209-14	

3/15/2013
C:\Users\jgarcia\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\B7QK6Q1G\00923-0001\Utilities\Drawings\January 2013 Roadway Revisions\Rockwood Gas\RoSR2904_GAS-Detail.sht

ROCKWOOD
WATER,
SEWER & GAS

GAS LINE RELOCATION

TYPICAL DETAILS
SCALE: AS SHOWN